LIVING TOGETHER

Threshold: Spaces between private and public realms in cohousing

Master Thesis

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Threshold: Spaces between private and public realms in cohousing

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Abstract

In Finnish modern apartment buildings, people hardly find intermediate spaces to communicate with their neighbours because current housing practice maximizes the rentable area of the building. Therefore, when the apartment dwellers step out from their entrances, they experience barren hallways only functioning as a passage. Like this, there is no chance to have a personal realm outside of the apartment. In consequence, the residents experience a big threshold to go outside from their home. Eventually, it leads to less communication among neighbours. Especially, children, elderly and people with intellectual disability have more possibility of isolation when they have no obligatory task outside. For these reasons, the author searches for threshold (transitional) spaces in cohousing from traditional to contemporary examples, and analyzes the connection of spaces with the "*Network Theory [1]*". Based on the results of the analysis, the author proposes an imaginary cohousing in Finnish urban context. In the imaginary scenario, around 20 dwellers would be in different family situations and ages. The cohousing aims to create new threshold spaces that would facilitate the connection among neighbours and foster a feeling of solidarity as being a part of a community.

Keywords: intellectual disabilities, threshold space, intermediate space, integrated living, cohousing, network theory

1. Network theory is a part of graph theory: a network can be defined as a graph in which nodes and/or edges have attributes.

It is a journey searching for a type of communal dwelling where people could live together regardless of ability, age or family situation.

Contents

[1]

To Kallio

I don't like to live in a dormitory
I don't like to live in an institution
But, I like to live in Kallio
In the peace of a bombshelter

It is good to be in Kallio
It is stupid to be in Töölö
It is always more fun in Kallio
And more places where to enjoy hobbies

I need some respect,
equality in my life
I need some respect,
dignity in my life

-PKN(Pertti Kurika's name day)-

Kallioon!

Mä en haluu asuu missään asuntolassa
Mä en haluu asuu missään laitoksessa
Mä haluan asua Kalliossa
Pommisuojassa rauhassa

Kalliossa on hyvä olla
Töölössä on tyhmää olla
Kalliossa on aina hauskempaa
Ja enemmän paikkoja harrastaa

CH: Mä kaipaan vähän kunnioitusta
tasa-arvoa elämään
Mä tarvin vähän kunnioitusta
ihmisarvoa elämään

-PKN(Pertti Kurikan nimipäivät)-

Prologue

In Dec 2015, I met Simon le Roux to ask advices for my thesis and he suggested me to get acquainted with one Finnish rock band, PKN. In the end, one of their songs, Kallioon! changed my perspective on the main direction for this project. In the beginning, I started to design a housing for ten intellectually disabled clients. However, after I looked up the record of interviews of ten individuals (p.28), I found that they had diverse wishes and demands regardless of their disabilities. In consequence, I decided that I do not need to design a place for a homogeneous group of people having a certain disability. If a building is designed for a certain group of people due to their disability that creates segregation from our society.

In the song, Kallioon!, PKN proclaims to have a freedom to choose where to live regardless of their intellectual disability. They are a part of a minority in society as persons distinguished with down-syndrome. This provocative song delivers the message of human freedom regardless of being smart or not.

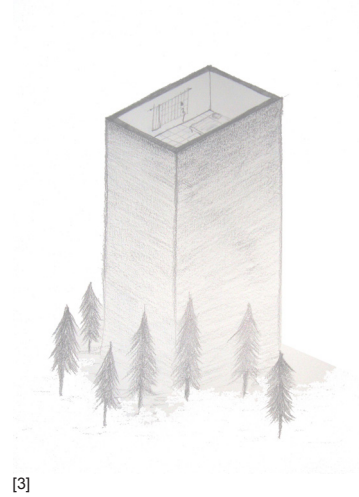
[2]

V Kallio, Sorbus, Vaasankatu dwellers outside the Sorbus art gallery.

[2] PKN

Introduction

During the 20th century and even recently, there has been countless constructions of apartment buildings with the increasing population and urbanization. For these reasons, architects and city planners have had chances to reshape the living spaces of citizens with the blocks of apartment units. However, the apartments tend to limit the boundaries of the dwellers' life. Whereas detached houses have easy connections to the outside of the building regardless of their sizes, apartments tend to restrict the dwellers only to individually rented areas.



[3]

[3] living alone, Sudar Oli Gunasekaran, Byungmin Youn, My Home project, 2014

Vulnerable groups

Jan Gehl, Life between Buildings p.9
'necessary activity' includes those that are more or less compulsory - going to school or to work, shopping, waiting for a bus or a person...These activities will take place throughout the year, under nearly all conditions, and are more or less independent of the exterior environment. The participants have no choice.

For this reason, architects are in necessity to consider the people who have difficulties with living in apartment buildings. The people without '*necessary activities'* (Jan Gehl) experience a big threshold to go outside from their units. There are three groups who will be taken into account in this paper: children, elderly and people with intellectual disabilities.

children

In cities, many children are born in nuclear families. In contemporary society, it is normal that most of their relatives are living far away. Children also grow up in a home without their own yard, but with playgrounds only reachable after long staircases. These children have bigger thresholds to play outside and socialize with their peer groups than those who live in houses. Then, as an easy option, their parents offer them electronic toys to keep their children in their small apartments away from trouble.

elderly people

When people get old, they spend more hours in home. However, they need to manage with their daily diet and entertainment in a small apartment unit. Due to their limited physical capacity, they may not be able to participate in social activities away from their home. Thus, it is normal that they fight with the fear of death which may come one day without their family's attention. They would need spaces with companies where they could hang around easily.

people with intellectual disabilities

They are the people whose IQ (Intelligence quotient) is estimated to be below normal adult IQ. Thus, a majority of them live with their families or in supported housing. Their parents expect that their children would suffer from isolation from their neighbourhood, when they live in an ordinary studio apartment. However, people with intellectual disabilities also wish to have an independent life with appropriate living conditions.

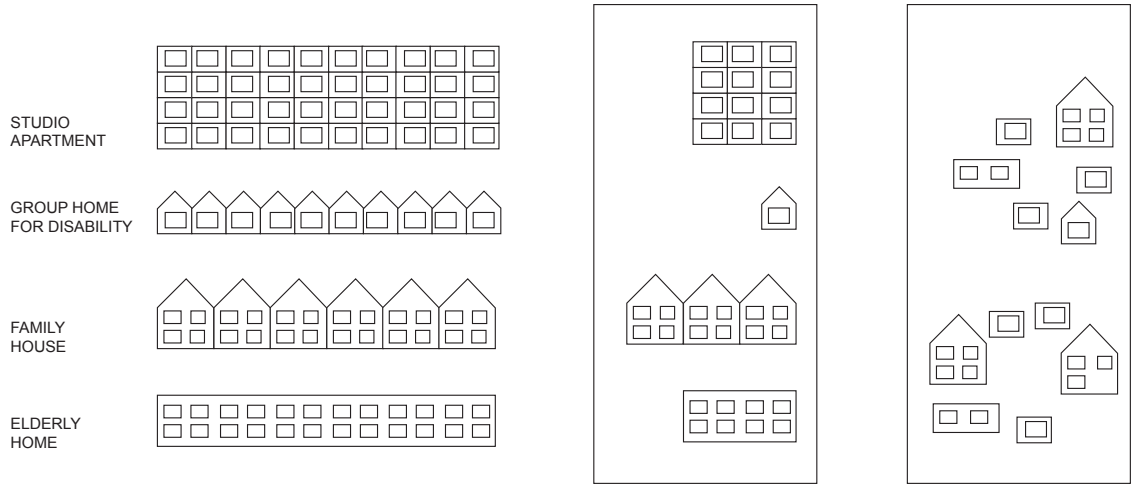
Cohousing (Integrated living)

As mentioned before, the vulnerable groups commonly wish to have more casual meetings in their neighbourhood than others. Among various types of cohousing, integral housing suggested by Schittich Christian (below) could be a proper solution for those vulnerable groups. However, it is a common practice that people with similar situation are living together. Historically, nuns and monks lived together because of their religion oriented life. Also, farmers tend to live amongst each other since they need collective works quite often. However, what is the reason for the people living in city to live together?

Integrated housing facilities as multiple-generation homes are supposed to offer older people a social environment that encourages their integration into society, much more than specialized senior facilities ever could. As traditional family bonds dissolve before our eyes, the classic nuclear family as a communal household is being replaced evermore frequently by singles, childless pairs and single-parent families. At the same time it is important to integrate immigrants and the disabled. Stripped to its principles, Integrated Living means different groups of the population living together under one roof, and, as such, different residential forms in the same building. The goal is mutual enrichment and support. Integrated Living means communal residences, housing for multiple generations, barrier-free housing, homes for families; in the extreme it can also allude to the spatial proximity of living and working or leisure activities.

Schittich Christian (2007), Senior-friendly, integrated, flexible

[4] Concept of integral housing



[4]

In between

People come to cities in search of better education and working conditions than that of their previous home towns. On the other hand, people tend to be careless about their neighbourhood, but are busy with their individual tasks. For the new settlers in a big city, small studio apartments look satisfactory to have a rest and fulfill other basic requirements of life. However, people started to live densely even though the funcionality of an urban life systems may not be proved. Each citizen has not designed his/her neigbourhood but occupies it like a temporary dweller. It is easy to find dry and cold neighbourhoods in cities, especially where there are many rent apartments and studio apartments.

Rent apartment

Christopher Alexander (1977), A Pattern Language, Oxford University Press

The landlords try to keep their maintenance and repair costs as low as possible, the residents have no incentive to maintain and repair the home; infact, the opposite since improvements added to the wealth of the landlord, and even justify higher rent. And so the typical pieces of rental property degenerates over the years. Then, landlords try to build new rental properties which are immune to neglect. Gardens are replaced with concrete, carpets are replaced with linoleum, and wooden surfaces by formica: it is an attempt to make the new units maintenance-free, and to stop the slums by force, because nobody loves them.

In this writing, the author reflects of a general situation of the US, but it is a general situation found in many other countries including Finland. There are two other reasons for the barren hallways and streets. The first one is an example from the UK and the next one is from an interview with co-founder of Käpytikkä-talo (nurshing home for people with intellectual disability) who is also a parent of a current resident.

Rob Wilson (2003), Common ground:Mediating Thresholds Between Public and Private Space in UK Housing Design

Trend of living in single

As an example, the transition from the private home to public space was delicately done in Victorian style housing with their terraces. Each residence living in the ground floor having a good transition space where they can express themselves. Conversely, nowadays, the trend of living in single apartments means having each one's own kitchen and

livingroom. Accordingly, these bring more pressure to the limited building plot and difficulties having transition space what was existed in Victorian style housing.

Fire-regulation

Pekka: Yeah. Well.. we were planning in the very beginning that we would like to have those two different kinds of slide doors but there were authorities, you can not install such doors in the housings because of fire safety. We had a lot of great ideas but we could only accomplish about only 60% of those great ideas of the foreign students from Taide korkeakoulu (current Aalto University).

Author: Yeah. I also like to ask; In front of each door, you have bit wider hallways compared to other apartments. Was there some reasons for this?

Pekka: Well the reason. Originally, we thought that we could furnish those spaces like.. commons areas.. semi-public (semi-public) *with so we can have couches in there. But again then, the Fire Department said that "You don't install anything there".*

Author; Maybe the space should be evacuated?

Pekka: Yeah..And I asked it many times that "Do you really think that they will jump out of windows? If we put the couches on there?" But you know,, they are so.. stubborn. They just have one listen and that's it.

Interview, Pekka Sarasi, Byungmin Youn, Kapytikka-talo, Helsinki

Käpytikka-talo could not realize semi-private space in front of each private units due to fire regulation. Nevertheless, when it comes to cohousing, transition spaces can play a pivotal role in practice. Anna Helamaa supports this idea mentioning about spaces between private and common in cohousing.

Community-oriented housing renews the spatial solutions in dwelling. The flexibility and accessibility of shared spaces, as well as the border between the private and communal, require particular attention from the architect. The spaces should encourage encounters, yet at the same time preserve the resident's option to withdraw into their own privacy as well as regulate their degree of privacy.

Anna Helamaa, Together(Yhdessä), Arkkitehti (4/2014)

Background (Beginning of this project)

[5]

[5] in front of a resident's studio unit. Rastinkoti, Helsinki

This research started with a studio project, My Home (Mun Koti), at Aalto University, Finland. In the Autumn of 2014, eighteen students and three faculty members from different academic fields were gathered to design an appropriate future dwelling condition for ten youngsters who have intellectual disabilities. The studio project started because the parents of the youngsters were reluctant to let them move in ordinary studio apartments in Helsinki. There would be a lack of communication among the tenants in conventional apartment buildings. Therefore, isolation from society is commonly expected from these youngsters who do not have an organized schedule or everyday tasks. Even though the parents wish that their children enjoy autonomous life in the future like other young adults, only group homes with 24h nursing service are available as one tangible option for them.

However, the author's attitude to solve the problem has changed from merely designing co-housing for a certain group of people to a universal group of people. [p.7] Thus, the following paragraphs refer to FAIDD (The Finnish Association on Intellectual and Developmental Disabilities) and UN (United Nations) Human Rights to support the idea of integrated cohousing.

FAIDD, http://www.kehitysvammaliitto.fi/wp-content/uploads/people_with_intellectual_disabilities_in_finland_b.pdf

FAIDD firmly proposes that any person with an intellectual disability must have the right to choose for themselves where, how and with whom they live. This is consistent with the requirements of the UN Convention on Rights of Persons with Intellectual Disabilities.

In practice the possibilities to choose are not realized in the manner stipulated by the convention. It is often the service supply that determines where a person with an intellectual disability lives. In some municipalities there may only be one option available, which limits the possibility of choice. The most common forms on offer are group housing type solutions.

United Nations Human Rights, Convention on the Rights of Persons with Disabilities, http://www.ohchr.org/EN/HRBodies/CRPD/Pages/ConventionRightsPersonsWithDisabilities.aspx#19

Article 19 - Living independently and being included in the community

States Parties to this Convention recognize the equal right of all persons with disabilities to live in the community, with choices equal to others, and shall take effective and appropriate measures to facilitate full enjoy-

-ment by persons with disabilities of this right and their full inclusion and participation in the community, including by ensuring that:

(a) Persons with disabilities have the opportunity to choose their place of residence and where and with whom they live on an equal basis with others and are not obliged to live in a particular living arrangement;
(b) Persons with disabilities have access to a range of in-home, residential and other community support services, including personal assistance necessary to support living and inclusion in the community, and to prevent isolation or segregation from the community;
(c) Community services and facilities for the general population are available on an equal basis to persons with disabilities and are responsive to their needs.

Objective

The aim of this project is to propose threshold (transitional) spaces in cohousing where people live together regardless of their ability, family situation or age.

Research Questions

-How are semi-private or semi-public space organized in existing community oriented housing?

-What kind of relationship do semi-private spaces have with private spaces in the community-oriented housing?

-How do transitional spaces work in community-oriented housings for people who have intellectual disabilities?

-Do semi-private spaces around private apartment units rejuvenate the social life of residents?

Research Method

Firstly, the author introduces a new analysis method based on the Network theory. To reinterpret the plans and sections of the building examples with the Network theory, a customized Network theory methodology is applied.
In general, scale free '*nodes'* and '*links'* are the basic elements for analysis with the Network theory. However, in this thesis the author applies different scales on both nodes and links to take into account the different qualities of space and the levels of connectivity. Then, the author presents the space network diagrams of the reference buildings and compares them to figure out the common feature of cohousing spatial network.

Outline

This thesis consists of nine parts. In the beginning (1), the prologue mentions about the change of the design direction. The following chapter (2) describes the background information of the thesis topic (spaces between private and public realms in cohousing). In the third chapter (3), the author describes the current city life to delineate our society with three story lines. The fourth (4) part is about the three vulnerable groups (children, elderly, people with intellectual disabilities). Chapter five (5) studies about suitable conditions for this vulnerable groups. In the next part (6), the author defines the meaning of threshold space for analysis.

The part seven (7) consists of reference building studies. Firstly, the author explains the methodology of analysis and introduces four community oriented housing from; China, Finland (n=2), and Switzerland. The study applies the Network Theory to analyze the spaces between private and public realm in the buildings. In the last part of the chapter, the author compares the space networks from the four examples and brings the summary.

In the building design part (8), based on the summary of the last chapter, the author suggests a cohousing and presents it in order of different opennes of each floor level. The last part of the thesis (9) shows the space network of the building proposal and detail of space use.

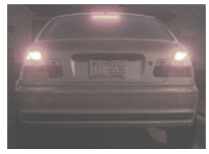
Retrospect

Looking back at our society is one thing an architect cannot miss before a building design. How has it been? and how is it changing?

Apartment

Living Alone

Social Media



[6]

In the morning of a day, a man wakes up and looks on his mobile phone as he does everyday. It shows " 15° C sunny". An hour after, he leaves home with his two kids and pushes the "Down" button to call the elevator. He tightens his shoe leads while the elevator comes and the doors are opened. Luckily, nobody is in the elevator and he feels a little bit of comfort. He stares at the numbers decreasing steadily. He wishes it does not stop. In less than a minute, the elevator brought them on the basement floor. He pushes a button on his key. And his car responds with a "beep". The father and his children swiftly walk through under the dim lights. They put their bags in the car and slam the door. When the father starts to drive, he focuses on the red lights in front of him. The lights say "slow down and keep distance". At that moment, 6 meters above him, a seventy-year-old lady is enjoying the morning breeze.

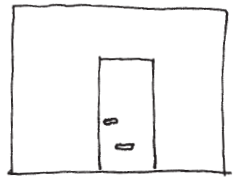
[6] car

Apartment

A majority of the population in cities live in apartment buildings where dozens of households are stacked together in multiple floors. This phenomenon has been caused by the wishes of many people who want to live in the cities within affordable prices. There are various chances to find workplaces, services and education even though apartment life requires a dweller to give up several meaningful aspects that detached houses have.

Likewise, for many metropolitans, dwelling in an apartment is not an option but it is the only chance when houses are in high scarcity. Not only single people but also a lot of families are affected. In consequence, our newborn generation start their life in apartments. After urbanization, young people rarely experience their own family house, which has a yard facing a street. For the families living in detached houses, the front yard means more than a space to grow vegetable and apple trees. Their gardens are a family realm, which is exposed to the world. That is not only a physical property boundary but also a potential venue to interact with their neighbours. People appreciate their existence by developing these human relationships. They have a sense of joint ownership in their street.

Conversely however, families living in high-rise buildings hardly find an intermediated space to communicate with the outside world and people. For many of them, the only property outside their home is their vehicle in the parking lot. Neighbours always see other families' car but not the people. Sometimes, people see the cars and assume one's economic status. Even worse, people put themselves into the car immediately when they leave the entrance of their apartment building and the lights of a glossy car replaces a neighbour's smile.



[7]

For her, it had become a habit to go to the supermarket in the morning. There is no other special place to go to than the shopping centre near by. There are cafes and lunch restaurants on the second floor of the shopping centre. She enjoys lunch time with her friends. Then, before the darkness comes, it is good to go home. She doesn't like going back to a dark apartment. That is the moment she considers about moving to the elderly home which her daughter suggested last weekend. However, it seems better to have her home here. She still feels healthy enough to take care of her home.

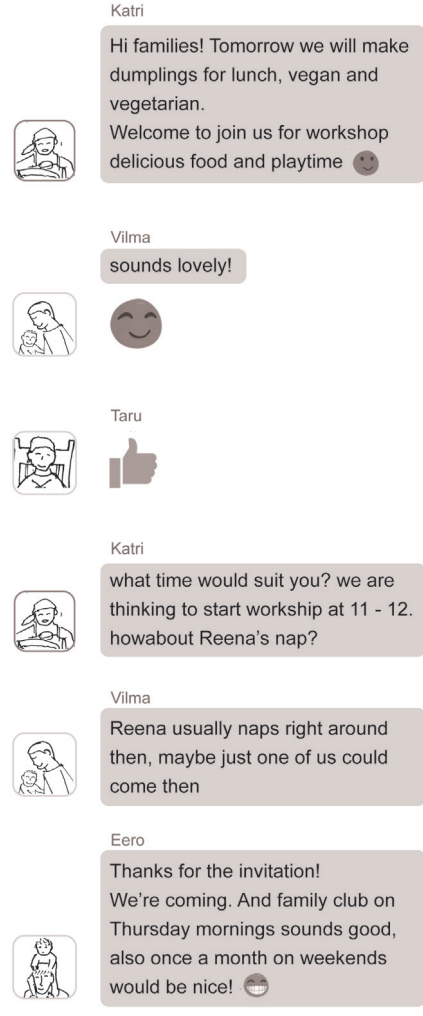
The elevator arrives to the eleventh floor. She holds a key and passes through in front of anonymous doors. "There is my home. It is time to have my own evening."

[7] sketch of an ordinary apartment door

Living Alone

It is worth pondering over the features of life in a city. People living in cities tend to schedule their days. So, they are busy in general. Many citizens are full-time workers or students. At the same time, an apartment building has many unknown dwellers who come back home only for rest. They spend time outside because there are many places to hang around in a city. For example, restaurants, schools, shopping malls, etc. All the goods and services are available from the shops where you can exchange with money. Even the well-facilitated public transportations bring you back home efficiently within a reasonable price. Consequently, people do not have much energy to share with their neighbours. Then, they watch TV or enjoy the Internet space. Their apartment can be assumed as a great place, if there is a comfortable sofa, TV and privacy. It is a well-protected place, especially for those who live alone.

When she put the food to the refrigerator, A
beep sound came in the middle of the calmness.



[8]

[8] chat from Family club Väinö Auerin katu 13

Social Media

Social media brought our neighbourhoods another dimension of communication. With the emergence of the Internet, people started to imagine sharing information regardless of physical distances. Then, decades after, smart-phone introduced omnipotent communication and connects us to more off-line meeting than ever before. Even though there are many criticisms for the overuse of social media, organizing off-line gathering has become much easier with the 'Event' pages in social media.
It is a phenomenon that started only after 2010, when people started to use Facebook in general to send messages more than SMS. The major advancement of 'Facebook' is that the messages come together with a personal information of the sender. In other words, your avatar exists in the virtual spaces and other people trust your Facebook identification.
Therefore, it is common to use Facebook as a media of communication, when it comes to the people who you already know or who you have possibility to get to know in the near future.

Future Residents

Who would live together in the future cohousing? This chapter assumes the future demand for cohousing based on statistics from Finland with focus on the three vulnerable groups.

Households in Finland

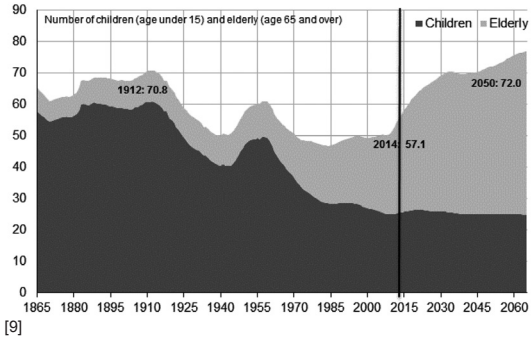
The briefs of statistic results from Finland gives the ground of demand in housing and changing society.

- Married or Cchabiting; couples without children make 48.8% of the population in the year 2010.
- 45 per cent of all dwellings are in blocks of flats.
- The number of one-person households grew most in older age groups in 2015.
- 41 per cent of new dwellings in blocks of flats were rented in 2012.
- Nearly one-quarter of the population lived in rented dwellings in 2011.

Release, Dwelling and Housing conditions, Statistics Finland
http://www.stat.fi/til/asas/tie_en.html

Elderly People

The percentage of elderly population is increasing significantly in Finland. This shows the reason why all the new residential buildings require barrier free plans. The future housing are required to be suitable for elderly people.



[9]

[9] demographic depedency ratio 1865–2065, Population projection 2015-2065, Statistics Finland

People with Intellectual Disabilities

There are around 40 000 people with intellectual disabilities in Finland, amounting to 0.8 % of the population. Among them, around 1300 (3.2%) persons with intellectual disabilities live in institutions. 17 000 (42.5%) persons with intellectual disabilities live with their families, 9 000 (53%) of them are adults. Around 11 000 (27.5%) persons with intellectual disabilities live in serviced housing, 9 000 (22.3%) of them in group housing, and a little over 2 000 (5%) in supported housing.

FAIDD, http://www.kehitysvammaliitto.fi/wp-content/uploads/people_with_intellectual_disabilities_in_finland_b.pdf

Plan in Finland
The aim of the KEHAS program of the Government of Finland is that by 2020 no person with an intellectual disability would live in an institution. The goal is to produce 3 600 new apartments for intellectually disabled persons by the end of 2015, amounting to 600 apartments per year.

People with Autism

What is autism? It is one of the major reasons of intellectual disability featuring with difficulties in social interaction. However, it is essential for architects to understand autism.

Koegel L. K., Koegel, R. L. & Dunlap G. (1996) Positive behavioral support: Including people with difficult behavior in the community

Autism is a developmental disability that typically appears during the first three years of life. It is characterized by impairments in social interaction, verbal and non-verbal communication skills, imagination, and sensory processing and is often accompanied by restricted and repetitive patterns of behaviors, interests, and activities. Many individuals with autism and sub-average intellectual ability may exhibit serious problem behaviors, such as aggression, self-injury, property destruction, and tantrums.

These behaviors have profoundly negative impacts on the quality of life, not only for the person displaying the behavior but also for members of their family. Problematic behavior limits opportunities for community living, employment, school inclusion, and social relationships, as well as demoralizes family members, frightens teachers, and alienates peer .

However, there are different scales of autism symptoms, with individuals ranging from those who need some support in social interactions and switching activities to those who require substantial support.
In addition, a majority of autistic children need some help and get better with proper education and supports. For them, social interaction is the most challenging part though it is a good influence to have people around. A family that has enough space for an autistic child has lesser stress. The following paragraphs are the interviews from the parents who have an autistic child. The next pages present information about ten youngsters with different intellectual disabilities majority of them having diagnosis of Autism.

Interview, Pekka Sarasi, Byungmin Youn, Kapytikka-talo, Helsinki

”Given relationships don’t last, own made do better” “We thought our child will have relationship among the twenty people as the parents here are friends of each other but that given relationships did not last long.”

Interview, Evelina’s mother, Byungmin Youn & Samuli Räisänen, Vantaa

”All the activities and hobbies that Evelina does nowadays are my decisions. If she would find ones that she really likes to do with others, I am sure she would do those more autonomously.” -Evelina’s mother-

10 youngsters with Intellectual disability

This results of the interview from the parents of youngsters with intellectual disability presents how each individual has different abilities and characters.

table 1. interview results, My Home studio project. Project Module - MUO - E0005 (Fall 2014), Aalto University

	age	siblings	sense of time	cleaning	cooking	communication	using public transportation(PT)	general needs in daily life	
Eveliina	14	one older sister	X	X	X	need to talk loud to listen	X uses (taxi) no PT available nearby	activator , guide forchoosing cloths, waking up , food preparation	
Henri	31	X	-	O	-	does not speak much	X	perceiving peoples facial features and expressions	
Liina	18	one younger brother	O	-	O capable of basic house chores	O Swedish, Finnish sends text messages	O	calculating money, paying bills, he sleeps too many hours	
Janne	-	-	-	-	O	-	O	paper work reminding to take medicine	
Jenna	15	one younger brother	-	-	OO	O	able to find her way in the neighbourhood	she does not like any source of light during the night time, too easily trust people, shopping and financial matters	
Joakim	14	three older sisters	X	-	X	O easily makes a friend but difficulties in maintaining	O	handling money His sisters help him in general	
Joonas	30	-	O	O	O	O Finnish, English	-	hyper-acoustic issues walking in the darkness dealing with money	
Petra	25	three sisters	X	with help	with help	O	-	She is not good at reading. Hyper-acoustic sensoriyproblem	
Samuel	16	one older brother	X	-	O	O	O	adopting a new schedule	
Viivi	15	X	-	-	OO passionate	O disability in speaking she uses picturebook to deliver her ideas.	-	problems with motor coordination	

	personality	wish in future living	hobbies	future dream	etc
	introvert and shy but like communication	interaction with neighbours public transportation barrier free	swimming diving drawing dancing with the sister	actress in theater	Parents concern loneliness when she lives alone.
	physically active	be in the company of others	painting, complicate woodwork , swingming, staying in cottage in nature surrounding	-	awakening of body has been a vital factor in his development
	outgoing, social, optimistic ambitious	communal housing, place to play musical instrument	play music,reading music band, dancing, watching film	raod trip around America with her friends, future-romance	
	likes doing things together	bit bigger spaces than current private room	outdoor work with fresh air, travel to Tampere to see people, being together with friends	handling paperwork	studying to be maintenance worker
	very sociable	having nice yellow walls as she like yellow colour, barrier free space, adjustable kitchen table	walking outdoor play music in a band cooking hand craft		Down-syndrome; Her mother believe that place with well planned common area is suitable for Jenna to live. Also, having private place to invite any people who her daughter wants is important
	active frendly, open-mind	detached house in Helsinki, ceiling is painted with black and stars	spending time with friends, team sports, biking	Linnänmäki(amusement park) machine operator	In need of helping his scheduling of daily life
	active social and friendly		running outside	working in a library being a coach in a soccer team	He takes care his routine and schedule quite well
	-	place to display her paintings, cabinets to organize different things, shelves in reachable hight, good sound insulation	drawing and painting making scrap books watching film	toy design	She works from Mon-Fri day for painting Christmas card. Already independent from her parents
	physically active	living with a dog	soccer, take caring pets, playing video game online with his friends	chef	
	she has patient and determined social	barrier free plan	drawing and painting play piano play drums in her band		good motivation for independent life. She had good friends

[10]

Human relationships are richer when there is physical contact in the neighbourhood scale. For people living alone, life can be improved through more sharing and connection with their neighbours. Like this, children can have a secure living environment around them.

The residents could be categorised with age, gender, and occupation. However, what people does to contribute for the operation of cohousing is the most important factor in this study and future projects.

[10] 22 numbers of imaginary future residetns based on activities.

Cohousing for vulnerable groups

A good living environment for different people does not always need to cater specifically to different needs. There are basic requirements for good living conditions that apply to everyone.
If a housing has a good living condition for children, it becomes a good condition for their parents. Likewise, this chapter is focusing on searching a good living environment for children with intellectual disabilities who are in the most vulnerable group.

Request for Cohousing

Specific Requirments

Request for Cohousing

Erosion of the Human Habitat

Such an urban anatomy must provide special domain for all degrees of privacy and all degrees of community living ranging from the most intimately private...To separate these domains and yet allow their interaction, entirely new physical elements must be inserted between them. It is because of the hierarchy of domains. Only when the habitat of urbanizing man is given such an order shall we perhaps restore to urban life a fruitful balance between community and privacy.

Serge chermayeff (1963), Community and Privacy, Toward a New Architecture of Humanism

After Industrialization and following urbanization, the status of neighbourhood in city has been assigned a low priority. In consequence, the vulnerable groups have difficulties staying in a home in big cities. Especially, in small apartments, people have privacy in ther units but communal life is hard to find nearby.
In this situation, there is a need for architects to bring blueprints with showing the images of possible stories in the new neighbourhood. Despite planning regulations, in practice, the designers can also partly rely on the human instinct of taking care of their inner boundary.

Territorial behaviour

Human territorial behaviour refers to the tendency by a person or a group to control or own an object or a place for social (identity, status, stability, family, community) or physical (caring for children, security, cultivation) reasons. It can be seen as building fences, personalizing one´s own or the communal house, and by participation in neighbourhood improvement and community development.

Altman & Chemers (1981), Culture and Enviroment

What is essential is that we conceive of building, literally as well as metaphorically, as a social act with its own intrinsic integrative power. In this we understand architecture to be the background and space of human interaction, which can be encouraged or prevented by what is built, but never has the automatic result of generating a social network perse. Believing in this would amount to regressing to a kind of determinism that we have long since abandoned. Many model buildings and settlements of integrated living proceed from a group of committed people, who never saw housing construction as the abstract product of a development agent.

Integrated Living - Expanding the concept-Peter Ebner (2007), Integrated Living - Expanding the concept

Specific Requirements

Co-operation and good communication play a pivotal role in the operation of cohousing. In that sense, autistic children are regarded as people who will have difficulties in a community. However, when our society takes care of the most unpriviliged persons, the living environment will be improved in general. Hence, this study searches for the specifications for a good living environment for autisitc children.

Robertson (2010), Wasan Nagib & Allisons Williams, Toward an autism-friendly home environment

Living in a society designed for non-autistic people contributes to, and exacerbates, many of the daily life challenges that autistic people experience. To this effect, architects can play an important role in making our society more autism-friendly.

According to the study on “Toward and autism-friendly home environemnt” by Wasan N. & Allisons W., the interviewed architects (n=5) commonly point out the lack of sociability of autistic children.

Interview with an architect, Wasan Nagib & Allisons Williams (2016), Toward an autism-friendly home environment

You need to figure out how to design to allow people to be in a place with other people but not in the midst of it … they kind of want to be in it but don’t want to be the focus … want to be part of the group but not to be in the group doing what the group is doing. So, it is important to design a space that has different gradations. (Architect 1)

This is one of usual challenges for autistic children. However, this is one human characteristic which can be seen from non-autistic persons.
Table. 2 (below) is challenges and design strategies of home environment for autistic children. These challenges are mostly experienced by parents who take care of small children.

table. 2 Result of Interview with five architects, Wasan Nagib & Allisons Williams (2016), Toward an autism-friendly home environment

Themes	Sub-themes, Challenges	Design strategies
1. Social and communication	Limited or lack of sociablity Easy distraction Preoccupation with detail	Organize space into zones with different gradations Provide generous spaces to allow for larger personal zones
2. Sensory	Noise and visual dysfunction (hypo and hyper) Sensitivity to heat	Provide quality acoustics to control noise Maximize natural lighting Avoid traditional florescent lighting Have a sensory-free room in the house
3. Imagination and perception	Difficulty to generalize	Space simplicity and sense of order Provide locks for windows and external doors
4. Safety	Elopment	Restrict access to kitchens, bathrooms, and laundry
5. Behavior	Aggressiveness and destructiveness Obsessive behavior (e.g. fascination with water play) Toileting behavior Vocal stereotyping Gross motor behaviors (jumping, bouncing, climbing)	Utilize clean and durable materials Remove climbable objects Ensure appropriate wall fixing of elements Provide wider spaces and higer ceiling Avoid any product with toxic chemicals

Among several given strategies from previous study, there are aspects of design that the architects need to focus on especially in cohousing design with Autistic people. Nevertheless, they are not unique design elements of architecture. Nevertheless, in ordinary apartment buildings these aspects are neglected in general.

To preview a space
To be able to see what's happening in the space before all of a sudden standing in the middle of the space. (Architect 1)

Interview with an architect, Wasan Nagib & Allisons Williams (2016), Toward an autism-friendly home environment

The interviewee architect says, This kind of detail in space provides the help to improve the ability of anticipation. The other architect mentions an additional aspect and that is also shared with a favor of with non-autistic people.

There are very limited places they can go out to without feeling embarrassed or disturbing others … extra space in the back of the church should be specified for cases like hers who need "quiet space."
(Architect 2)

Interview with an architect, Wasan Nagib & Allisons Williams (2016), Toward an autism-friendly home environment

In a nutshall, this thesis intends to research about gradation of different spaces by examining four different communal life-oriented housings in the two following chapters.

Threshold Space

Definition

Threshold; Transitional spaces

The topic regarding transitional spaces in housing has already been studied since the second half of the twentieth century after modern architecture arrived to the major urban areas. The interest towards the topic emerged usually from the architects who expressed doubts on modern housing blocks. For example, the studies from Christopher Alexander, and Sara Ishikawa suggest the alternative solution of architecture and town planning. More recently Till Boettger describes his idea of transitional space with the term “Threshold space”.

Every day we cross a number of spatial boundaries, moving from one zone to the next. We live in transition. Architecture builds on transition. Thresholds interrupt spatial boundaries for a transition from one zone to another. The phenomenon of the threshold thrives on spatial ambivalence.
Thresholds open up spaces and organize transitions. At the same time they are read as part of the boundary and can be perceived as a barrier. A space that is delimited by thresholds and spacedefining elements can be termed a threshold space.
Threshold spaces are required for access to the actual functional rooms. They provide a preface to perception of architectural space. They live in the sequence of what lies in the past, present, and future. This means: threshold spaces also live in the expectation of what is to come.

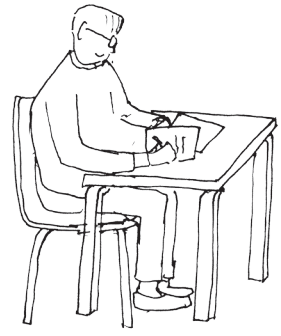
Till Boettger (2014), Threshold Spaces(Transitions in Architecture Analysis and Design Tools)

In Oxford English dictionary, “threshold” means

1. A strip of wood or stone forming the bottom of a doorway and crossed in entering a house or room:
.1[in singular] A point of entry or beginning

https://en.oxforddictionaries.com/

Likewise, it is possible to re-define “Threshold spaces” as places between different spaces. Not only spaces named as functioning room but also a space bringing a pause to people could be in the caregory. Thus, people are able to stay and socialize with others in the threshold spaces. Also, it can exist where people pass through but slow down their speed. Therefore, in cohousing, threshold spaces are deciding elements to help social interactions. It is not only a subordinate space but also could be main spaces such as courtyards.



Spatial Analysis of Cohousing

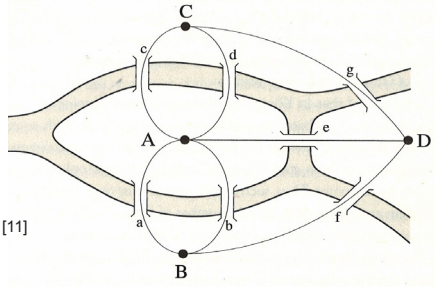
Here are four examples of communal-life-oriented housing. Each one has been built in different climate and cultural context. Accordingly, they show different spatial networks for communication among the neighbours. In this chapter, the author analyses each housing with the Network theory, and points out the spatial organization logic behind the building plans.

Methodology

The ‘Network Theory’ has been used in diverse fields of academy and real practice. With connecting ‘nodes’ and ‘links’, diverse phenomena and situations are visually expressed in an abstract way. The author uses the ‘Network Theory’ as a tool for visualizing the different gradation of private-public realm in cohousing spaces. In the analysis of community oriented housing, the theory will help to find certain patterns for active communal spaces.

In the network theory explained by Albert L. Barabasi, the elements (node and link) do not have a scale because the analysis focuses on the network itself. However, in this paper, the author applies different scales on the ‘nodes’ and ‘links’ as input to visualize the quality of space and connections between different spaces. The following paragraph explains the basic concept of the Network theory.

Network theory

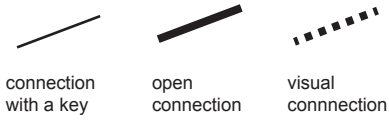


[11]

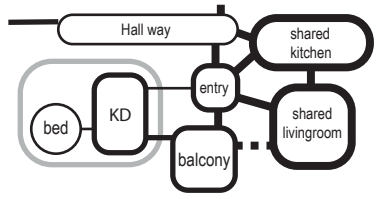
[11] Königsberg Bridges 1875, with Kneiphof island (A), Albert-László Barabási, Linked

Königsberg Bridges 1875, with Kneiphof island (A) and the land area (D) caught between the two branches of the Pregel River. Solving the Königsberg problem meant finding a route around the city that would require a person to cross each bridge only once. In 1736, Leonhard Euler gave birth to graph theory by replacing each of the four land areas with nodes (A to B) and each bridge with a link (a to g) obtaining a graph with four nodes and seven links. He then proved that on the Königsberg graph, a route crossing each link only once does not exist.

Albert-László Barabási (2002), Linked

Elements		Description
space		The circular shapes represent private spaces, whereas communal spaces are symbolized with round rectangles. Additionally, the ambience (or quality) of the space are reflected with differences of line thicknesses. In other words, more people spend longer time in the spaces with thicker lines.
link		Links have also various scales. The thicker lines represent easier connections between two different spaces whereasa thiner lines mean limited connections. The dot lines mean visual connection only.
boundary (dummy)		The gray boundaries are not elements for analysing spaces but help to understand the physical structure of buildings.

Example: Proposal building, U8



The gray boundary in the example is the studio apartment U8. This unit has a couple of connections to the outside (balcony and entry). From the inside, the balcony is easier to go than the entry because balcony is visually opened whereas the entry door is not. However, the connection between the balcony and theentry is easy.

The following pages introduce the four examples of communal-life oriented housing. Each one has been built in different climate and cultural context. However, through analyzing the space relations with the 'Network theory', it is possible to point out differences and shared characteristics of space organizations for active social interactions in a neighbourhood.

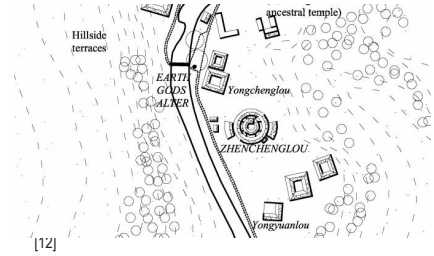
Zhenchenlou

Location: Fujian, China
Completed: 1912
GFA: 4,645 m^2(1,962m(G.FL)+2,344m^2 (upper FL)+339m^2(Guest Wing)
Number of residents: 5-600 persons

Here is a unique collective housing type from China. Among hundreds tulou in Fujian region, Zhenchenlou is one of the most recently built (1912) one. This circular shape of multistory housing had been built to protect their living realm against formidable attacks from other tribes during the unstable governmental period. It was just before the modern China was born.

Although the reason for constructing densely populated collective housing was different from current days, Zhenchenlou shows several features of collective life through their long history of modification. They opted for communal living and shared the meager harvests that the unproductive land yielded. At the same time, there were many challenges in the communal way of living in such a proximity with one another. That means maintaining harmonious relationships was essential in the building.

One of most important spaces in cohousing is the place which brings its unity. Thus, most of the Tulou have an ancestral chamber which situated in the most inner and central part of the building. The dwellers make ceremonies to memorize their ancestors because in Confucianism they are regarded as supernatural powers. This immaterial and spiritual space keeps the unity of the group.



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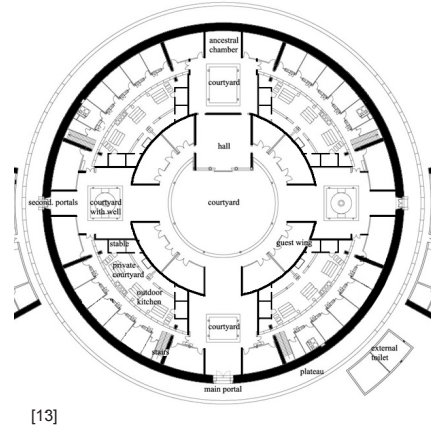

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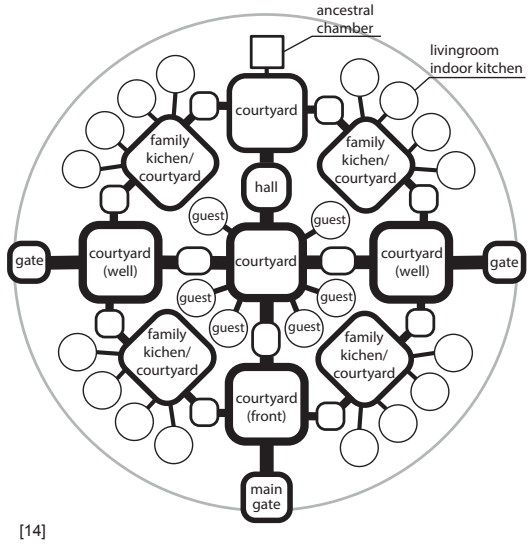
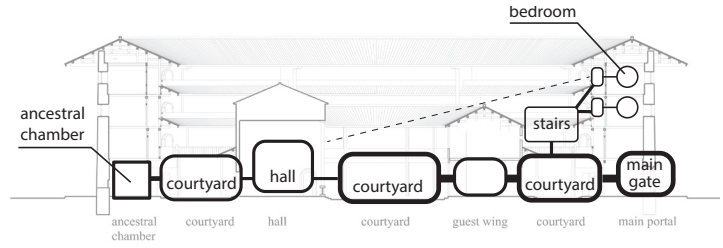


[14]

[12] a part of Honkeng village, Younding county, Fujan province, China, Source: Jens Aaberg-Jørgensen, http://www.chinad-welling.dk/

[13] ground floor, Zhenchenglou

[14] spcace network ground floor, Zhenchenglou



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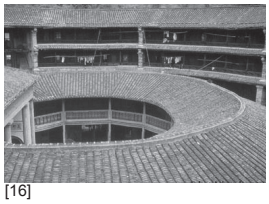
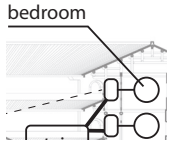


[16]

from private level

Although the dwellers live densely, each family courtyard is visually protected from other families by the inner building structure.

[17]



gallery

All the bedrooms are located along the gallery on two or three stories above the ground level.

[18]

livingroom & indoor kitchen

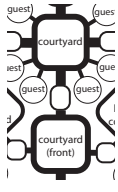
In the ground floor, here is the most intimate space for family. Even though it is an indoor space, residents are able to listen the sound from outside through the wooden screen.

[19]

family courtyard

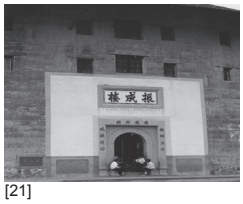
Here is a family's open-air communal space. A big family will share this place for cooking and eating together.

[20]



(front) courtyard

From this space, people can look at the events in the main courtyard. Also, all the visitors and dwellers walk through this space to move on to either more communal or private realm.



[21]

main gate

The building is on the platform where people are able to sit and wait for somebody. The main gate is still almost open to public.

[15] sectional space network, Zhenchenglou

[16] -[21] Transitional spaces, Zhenchenglou

Suontaka

Location: Suontaka Laitila, Finland

Exist: 17th to 19th century

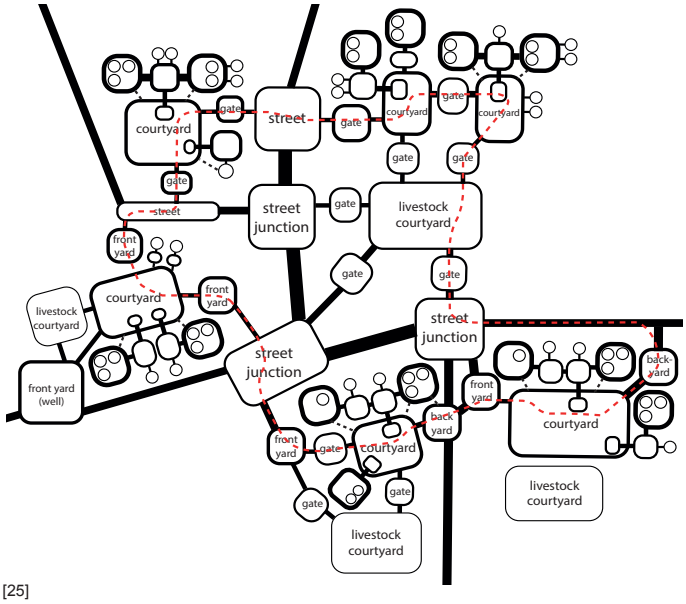
Configuration: 6 household groups(applx. 100-150 residents)

Until the 19th century, the majority of Finnish people lived in small villages based on kinship. In the villages, people normally did farming and had pasture for sheep and cows.

In Suontaka, there were six residential plots, and each plot included few other tenant families in the same courtyard. The tenant had an autonomous status and it was normal to pay the rent in the form of work. Each tila (plot) had their own warehouses, animal farm, barn and agricultural area. Also, the people built their houses near the road and next to each other as co-operation was common in their daily life. For example, they shared and exchanged their product with other families. When there was a feasting, or any kind of party, it was common to borrow each other's cutlery or table cover.

Courtyard for livestock and people

Each household had two different courtyards: one for people and the other for animals. Cows were able to stroll around and graze in the big courtyard surrounded with granary and huts. In autumn times, the animals also freely walked around the village streets.



[25]

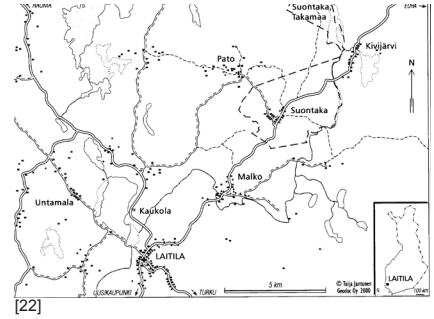
[22] Suontaka, Laitila early 1900s, Tuija Jantunen.

[23] map of the Old Suontaka village based on memory, Paavo Hakala 1961 Museovirasto, Se Sä

[24] buildings in Juho Uotila, 1800s, Pentti Hammarberg, Museovirasto, SeSä

[25] network of threshold spaces, Suontaka

Eino Jutikkala, Kauko Pirinen (1989), A History of Finland



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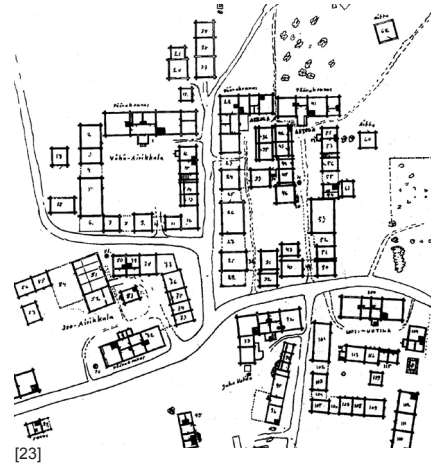

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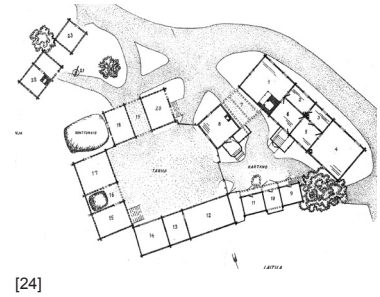


[24]

[26] Heinäkengän pirtti, Jämäsä Juokslahti

[27] dinner time in pirtti Riuttala, Finland

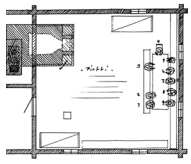
[28] porstua in main building, Riuttala Finland

[29] veranda, Murtovaara päärakennus

[30] [31] Jho Uotila, Suontaka

[32] Kaivolan pirtti dinner time, Kuusamo

[26]



[32]

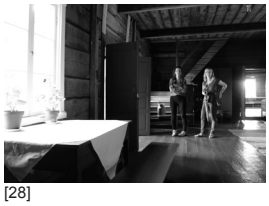
tupa, pirtti

Tupa, or pirtti is the main indoor space in Finnish farm houses. Due to the cold climate, there is always a big stone oven for cooking and heating. During the long winter season, tupa is the place where the families spend most of their time. There are a big dining table and long benches. Therefore, diverse functions are available such as eating, cooking, sleeping, gathering and working. The dimension of tupa is easily more than 7mx7m.

[27]

porstua, eteinen (vestibule)

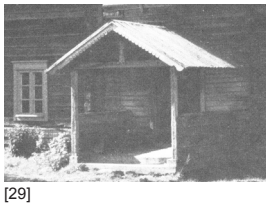
Several rooms have a connection to this space. Here is a middle space between two tupas, and is an entry to the guest rooms or storages.



[28]

veranda (porch)

The porches in the village are jutted out from the building. In summer time, people enjoy the outdoor space sitting here and spend time under the sunlight. They are still in the house but also in the courtyard.



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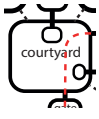
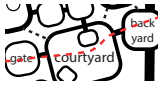


from backyard - courtyard - gate

The back of the courtyard opens to the back yard because the backyard is connected to a relatively quiet and less opened path.

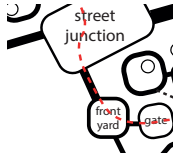
[30]



nousevatie to gate

Nousevatie means uphill road. If a person walks along nousevatie, he will face the gate.

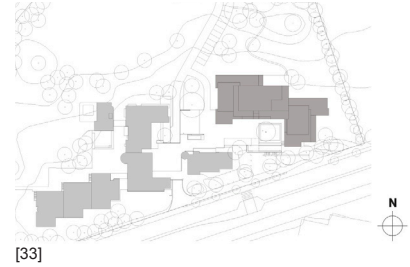
[31]



Wohnüberbauung Kraftwerk 2

Location: Regensdorferstrasse 190 und 194, Zürich-Höngg, Switzerland
Completed: 2011
Architect: Adrian Streich Architekten AG
Building Area: 804 m^2, GFA: 4060 m^2, Surrounding: 3256 m^2

This is a renovation project connecting two existing buildings with new building structures, communal terraces and stairs. The “terrace commune” offers an open space for all living spaces of the apartments.
The new terrace and stairs on the south facade do not account for evacuation purpose because the two staircases from existing buildings are connected to each units for emergencies. Hence, the residents are free to put any items on the communal terraces and stairs. The combination of stairs and terraces form an artificial landscape. When residents climb up each flight of stair, they face different terraces taken care by different residents living behind them.
The apartments are consisted of various residential types from two-room units to 11-room residential cluster communities (330 sqm).



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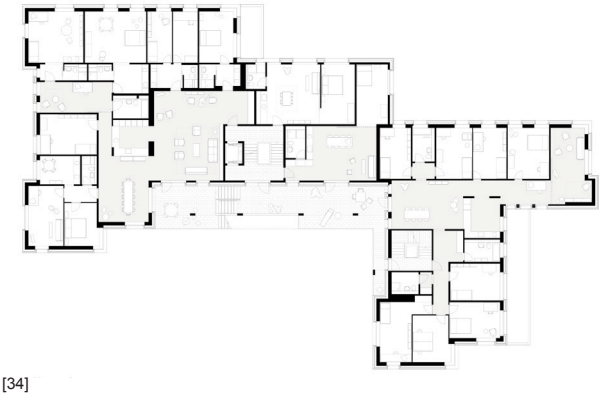
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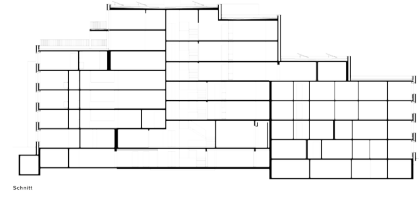
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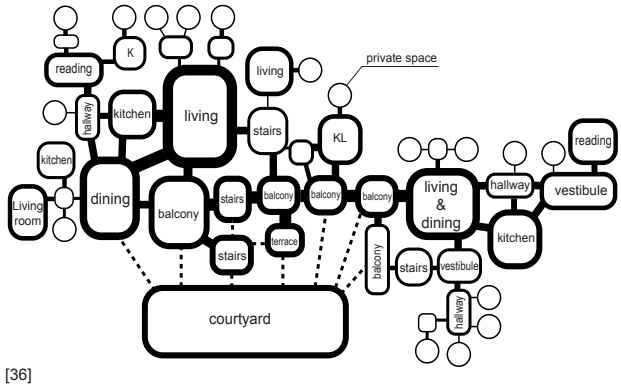


[36]

[33] site plan, Wohnüberbauung Kraftwerk 2

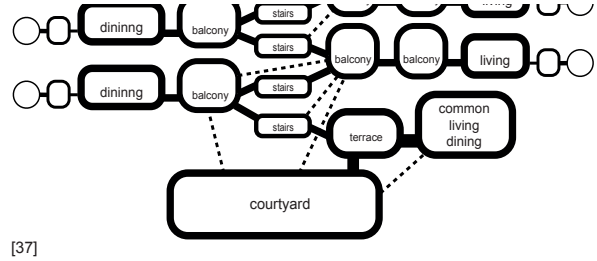
[34] floor plan, Wohnüberbauung Kraftwerk 2

[35] section, Wohnüberbauung Kraftwerk 2

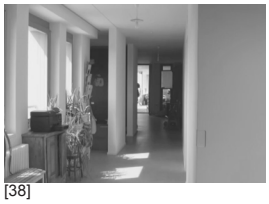
[36] space network diagram, Wohnüberbauung Kraftwerk 2

[37] sectional space network diagram, Wohnüberbauung Kraftwerk 2

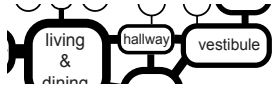
[38] -[43] Wohnüberbauung Kraftwerk 2



[37]



[38]



vestibule in front of bedroom

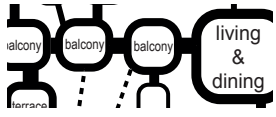
Having a sunny threshold space is valuable for the single dwellers. Here they can put plants and small benches and it can bring them to outside more often.

[39]

shared dining room to kitchen

Shared kitchens are located in the big residential circles. Since there are buffets, the people would not be bothered much even though someone sees from the dining room.

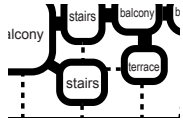
[40]



dining hall

Each household's dining place has an easy connection to the terrace.

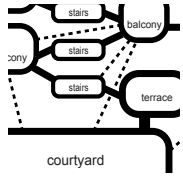
[41]



semi-private terrace

If someone spends time on the terrace, that person can greet neighbours. Here is a personal realm exposed to the neighbourhood.

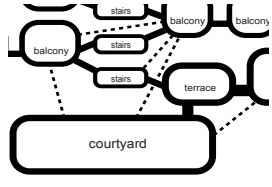
[42]



courtyard

The terrace is the place where residents are able to look at what is happening in the courtyard.

[43]



communal stairs

The south facing terraces work as visual connections between courtyard and upper floors.

Annikki Housing block

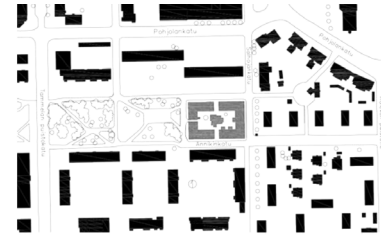
Location : Annikinkuja 2, Tampere
Completed : 2012
Architect: Hnna Lyytinen, Kaisu, Fränti
Gross Area: 2680 m^2
Original building : J.Pirjola, N. Nummi 1909

Annikki is a community oriented housing which renovated a 100 years old wooden housing block in the city of Tampere. It was one of the most common types of housing blocks until the current multi-story apartment blocks were introduced in the 1970's. Thus, Annikki shares several features of Finnish traditional village housing. They are sharing a big courtyard, and all the entrances are facing to there.

Particularly, for this project the future residents gathered and led a whole renovation process. Thus, the main criteria of renovation was different from other ordinary housing developments.

The premises were to preserve the building heritage of the city block, use traditional materials and rely on ecological design solutions that support the community. Markus Laine, resident.

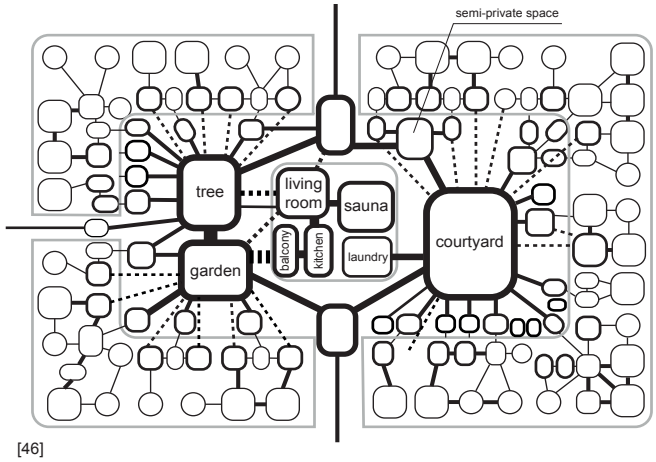
So, after the main structure part and technical installations, the interior design and repairment were taken in charge by co-operation of the future residents. According to Markus, as much as the repairment process was challenging, it brought them closer together.



[44]

Arkkitehti, Finnish Architectural Review 4/2014 p.30

[44] site plan, Annkki
[45] floor plan, Annikki
[46] space network, Annikki



[46]

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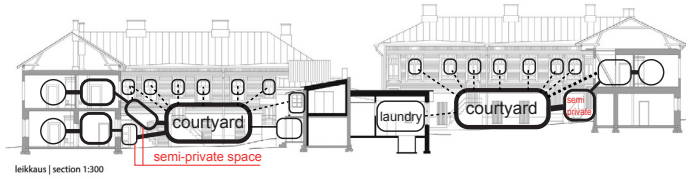
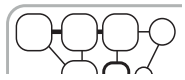


[47]

[47] sectional space network, Annikki

[48] -[53] transitional spaces, Annikki

[48]



livingroom & dining room & kitchen

Here is a sequence of different rooms. The different rooms are divided but connected.

[49]

visual connection

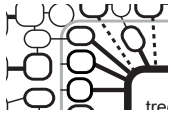
The advantage of a low story building is a visual reciprocity between inside and ground level.

[50]

entrance stairs, vestibule

The entrance connects dining room, living room and bedroom. This solution makes a less overwhelming stair structure from the outside.

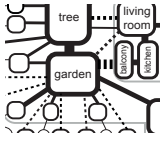
[51]



semi private stairs

Each unit has their own entry from the courtyard. As a part of the community, residents have a responsibility to take care of the front area of their doors.

[52]



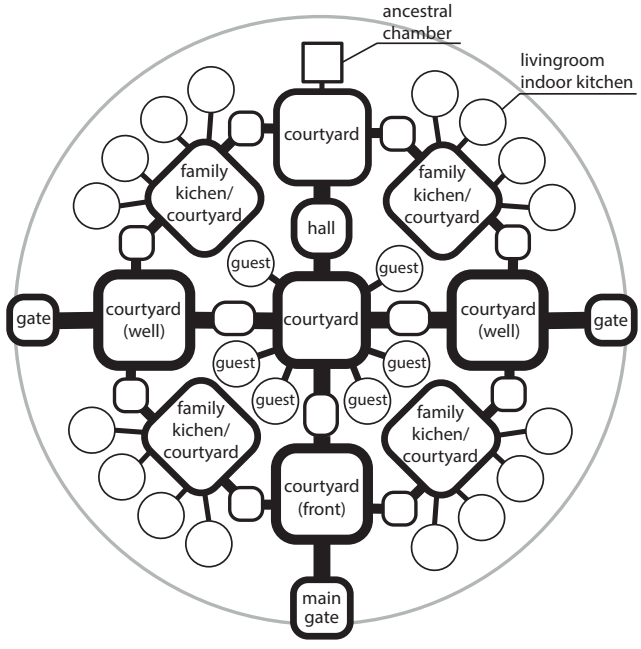
court yard

The semi-private spaces and windows of 9 households are interconnected to this courtyard. Also, it is a path to the common kitchen, living room and sauna.

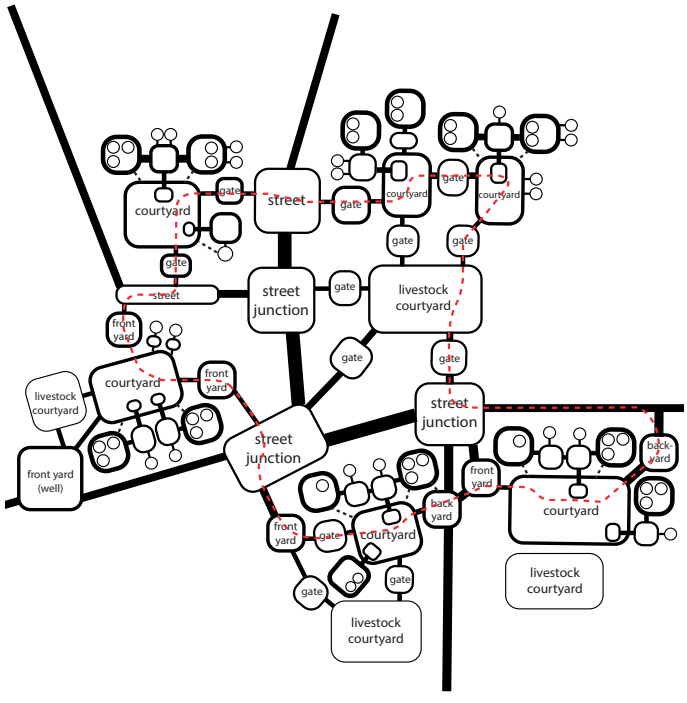
[53]

east gate

This is one of the three gates in Annikki. Residents use one of the three gates to get to their home. This pattern is commonly found in Finnish traditional village housing.



[14] spcace network ground floor, Zhenchenglou



[25] network of threshold spaces, Suontaka

Circles of communal spaces

In tulou, all the communal spaces are situated on the ground floor and they are linked to each other. However, each courtyard has a different grade of openness to public space.

Firstly, each family unit has an enclosed private courtyard and each of the courtyard has a connection to other courtyards which is shared with another family. The well was the place where dwellers met people during laundry or any other casual events.

Furthermore, all the three courtyards (with well) near gates are visually opened to the central courtyard through the gates. That is the biggest open area in the tulou where is important family celebrations could be held. To the north, there are two gates to the courtyard linked to the ancestral altar.

Most importantly, this enclosed structure is big enough for children to play. They are able to stroll around different courtyards and intermediate spaces because all the private spaces are on the upper floors. In other words, communication between different families is relatively easy due to a good ordering of semi-private and common spaces.

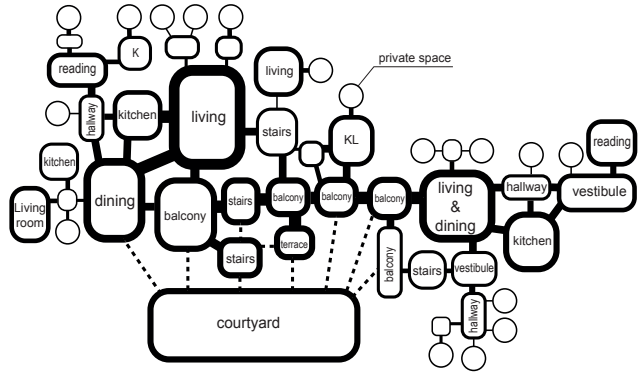
Network of household courtyards

As like Fujian tolou, the family courtyards in Suontaka have a certain pattern: Veranda (semi-private) - courtyard - front yard (or gate) - street junction - back yard - courtyard - veranda

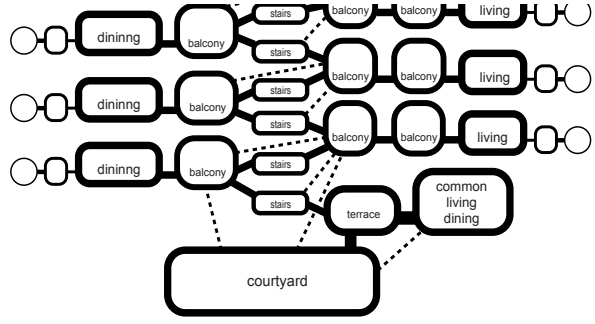
Also, each family courtyard has two openings to adjacent housing plots. In the connections, if a family courtyard exists next to the street or other households, it has a gate but if there is enough space, small open space between two different buildings replace the gates.

Vertical and horizontal Network

The most featuring point in Wohnüberbauung Kraftwerk 2 is extensively sequencing space organizations. It is like small promenades of semi private spaces. Even though it is a seven story apartment building, the terraces are connected by half-story height stairs and they allow visual connection from a floor to another floor. Also, from terraces, there are easy connection to indoor communal spaces (living or dining room) of each unit. On the other sides of the building, private spaces are assigned such as bedrooms and reading area. This communal terrace and stairs are possible with seperate evacuation stairs cases in the middle of old building structures. Thus, this modern example of cohousing, each communal space also has two gates to the out side.



[36] space network diagram, Wohnüberbauung Kraftwerk 2



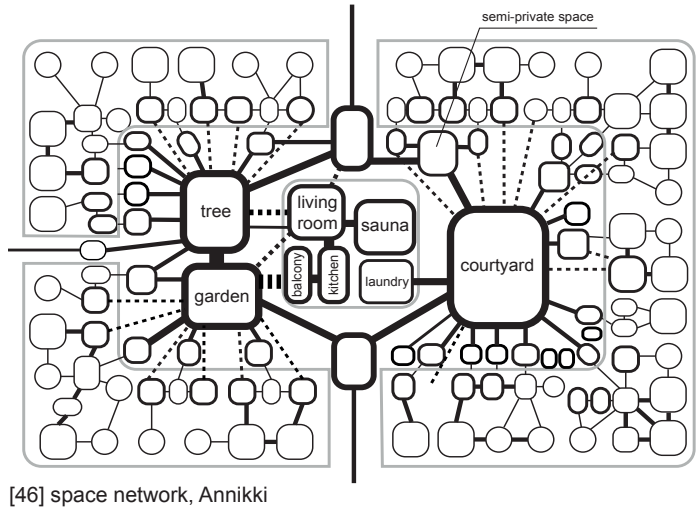
[37] sectional space network diagram, Wohnüberbauung Kraftwerk 2

Gathered semi-priave spaces

In Annikki, all the households have semi-private realms in the form of a portion ground or stairs in front of each home. Hence, the probability of casual meeting among the residents are high in the courtyard because people spend time to take care of their outside realm.

Even the communal building bock in the middle of the courtyard helps to improve the quality of the courtyard. For example, the building breaks the visual invasion from the street sides. So, people in courtyards are not exposed directed to the people comming from outsides and the visitors have a space for waiting inside the building block, but not in the courtyard.

Lastly, kitchens in most of the households are facing a couryard and are visually connected. This means that residents staying in home are ready to get involved in any events in courtyard.



[46] space network, Annikki

[47] sectional space network, Annikki

Summary

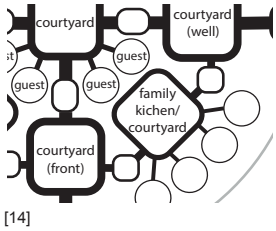
1. The examples of community oriented housings have several degrees of threshold spaces between private and public realms:

ex1) main gate - courtyard (front) - gate - family courtyard - livingroom
ex2) gate - courtyard - veranda (eteinen) - vestibule - tupa
ex3) main gate - main courtyard - communal stairs - terrace - dinningroom - vestibule - reading - entry - private room
ex4) main gate - courtyard - stairs (home front) - vestibule - bedroom

2. The courtyards include several households' semi-private zones. Therefore, there is a high possibility for casual events. Furthermore, the quality of communal spaces improves because each residents indirectly participates in taking care of the communal area.


[46]

3. All the courtyard (communal) spaces have at least two gates which allow the crossing of the spaces. In other words, there is no dead-ended communal spaces (courtyard).



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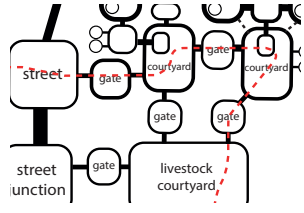
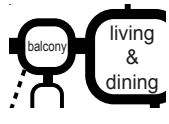


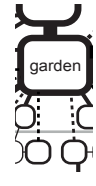
[25]

4. The living quarters (kitchen, dining places) of each housing are facing to communal courtyards. It gives visual cue for possible events in the communal spaces.


[36]




[48]



[46] space network, Annikki

[14] space network, Zhenchenglou

[25] space network, Suontaka

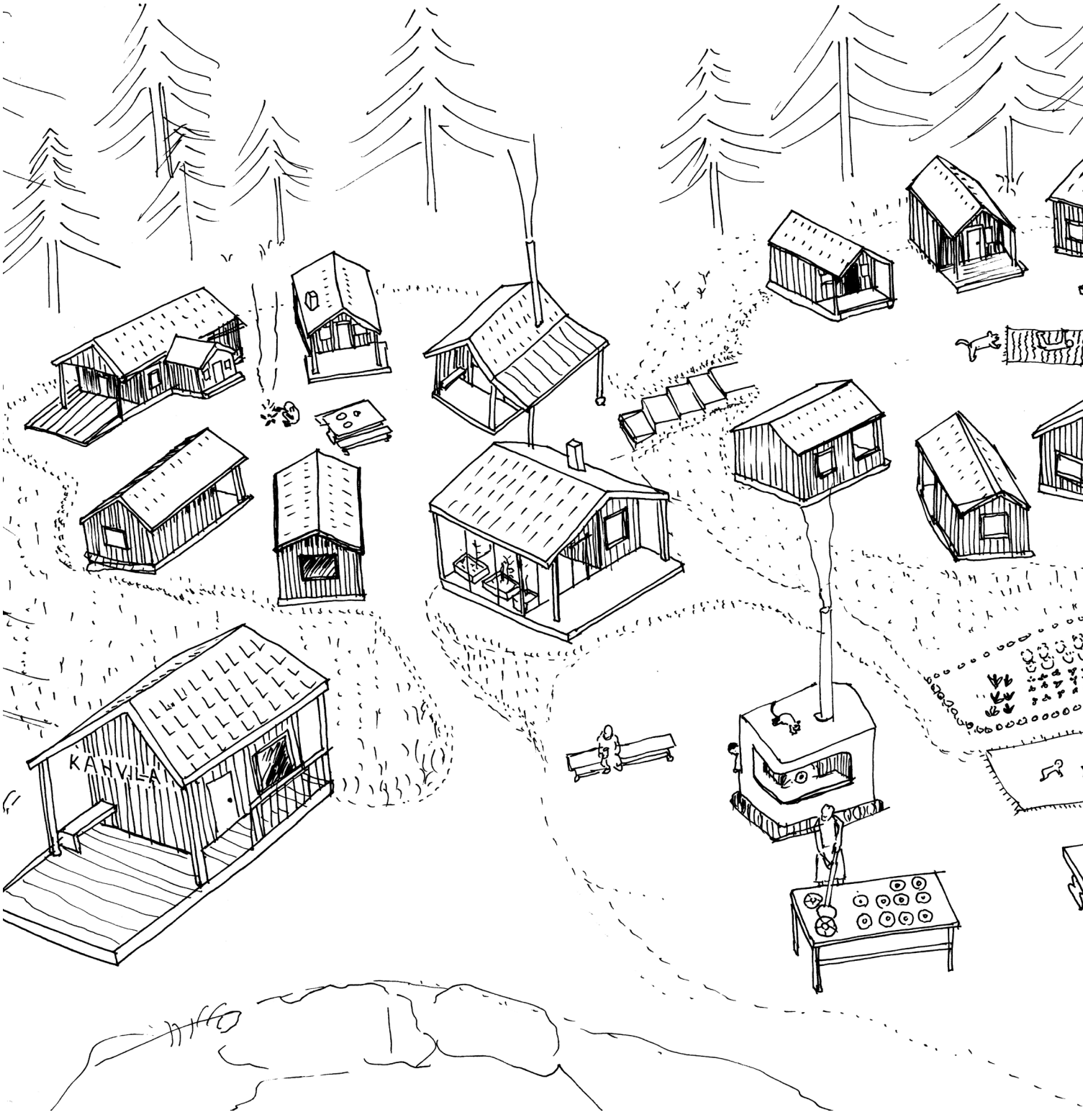
[36] space network, Wohnüberbauung Kraftwerk 2

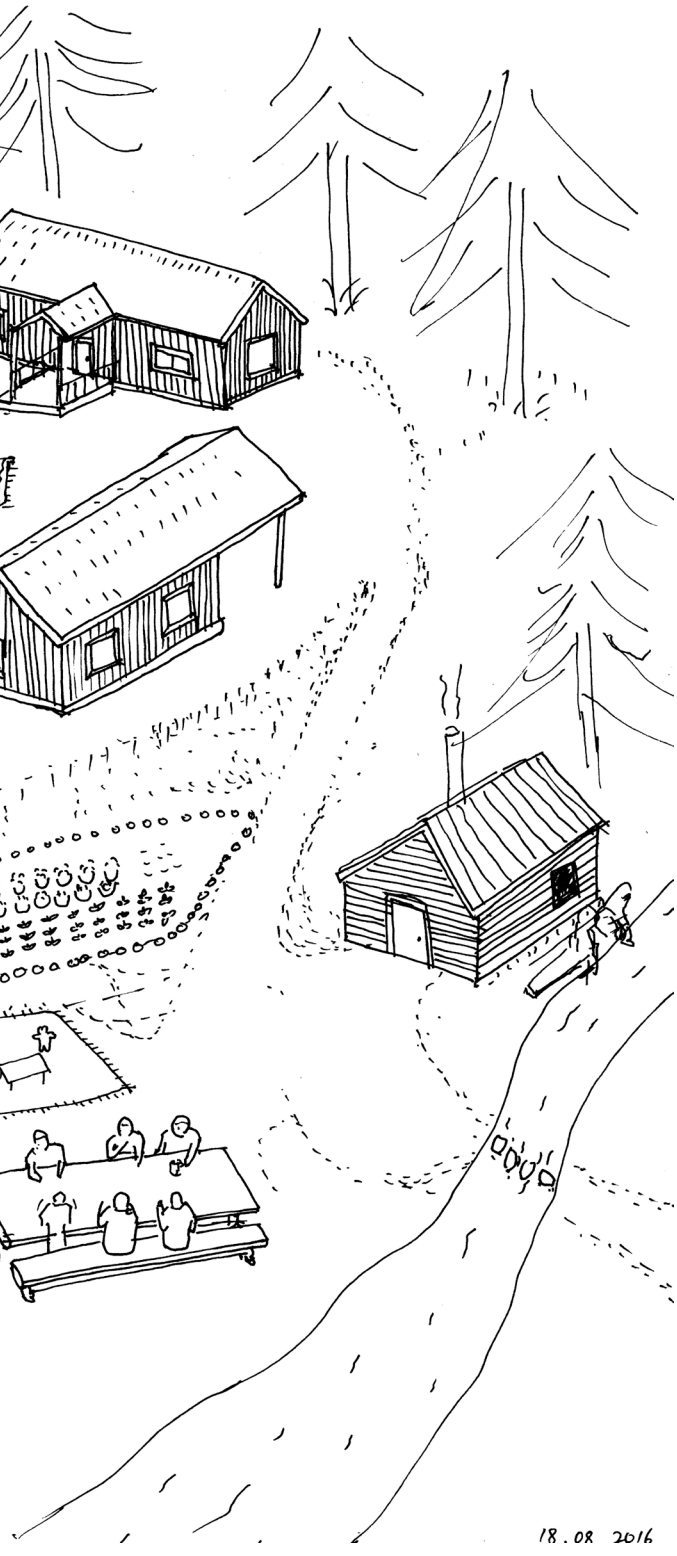
[48] view from kitchen, Annikki

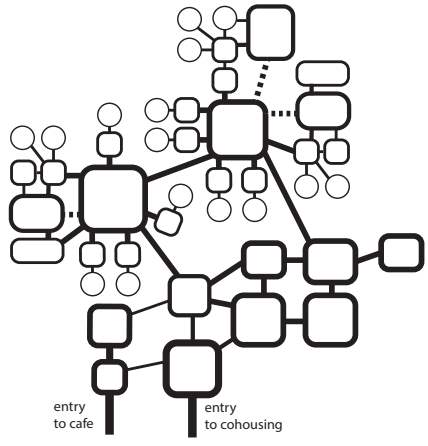
How to live together?

Imaginary Village

Future Residents


KAHVILA





[54]

[54] spatial network of the imaginary village

Imaginary village

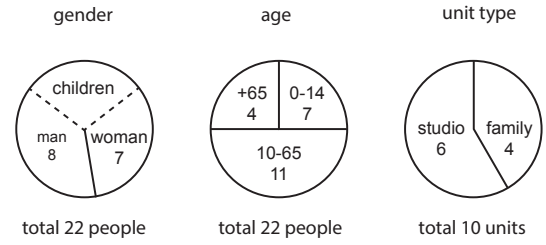
The drawing on the left side shows an imaginary village designed for 22 different human characters. They are living in small houses consisting of 10 different families. The households share sauna, guest house and kitchen. Ten houses are divided into two groups and each group shares a yard. The space organization of the village is based on the summary from the cohousing analysis (p.50).

In these detached houses, dwellers do not feel isolated because they can easily access to outside and communicate with their neighbours. When they see each other in the courtyard, they are able to be in a personal realm.

In the lower part of this small village, there is a big stone oven for baking and it cooks for all the residents. They like to have meal times together around the long table. Everyone enjoys communal meals because they are always healthy and fresh. Especially, with herbs for everyday cooking which are obtained from the garden next to the kitchen. Even during the winter seasons, the winter-garden allows some fresh vegetables.

Imaginary residents

The composition of the imaginary households vary in type in order to reflect the demand of current Finnish society. Among the ten households, there are three families with children, one elderly couple, one co-habitat without child, one single parent and four singles. Each one has different abilities and will contribute to the community in different ways.



[55]

22 Imaginary Residents

U1

U2

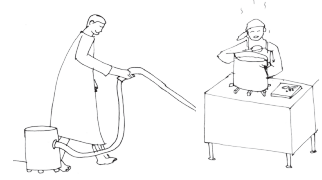
U3

U4

U5

U6

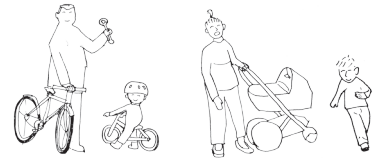
U7



U8

U9

U10



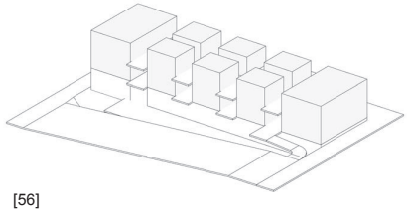
Space organization

[55] demography of future cohousing and unit types

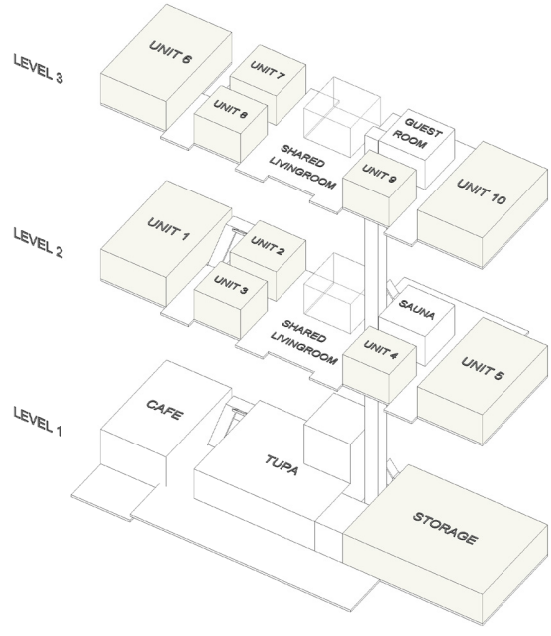
[56] building mass

[57] arrangement of space units

The building has three levels and each floor has different gradation of opennes to public. The first level has common spaces with a cafe which is open to everyone. The second floor has five residential units with a sauna. The third level also has the same formation of the units but a guestroom is placed where the sauna on the second floor is.



[56]



[57]

Spaces between units

Having gaps between units is the main architectural concept in order to assign the gradation in between public-private realms. Conversely, the apartment units will have less privately occupied spaces. As private units are minimized , the extra space will be used for more shared area.

Circulation

There are two staircases in the building. One is near the main entrance and the other is annexed to the core space in the middle of the building together with the elevator. As the tupa is most high in use as communal space, it is located in between the three vertical paths.

The family units sit on each side of the building. So, they can reach their units without passing the shared livingroom space (middle of level 2 and 3), but still it is possible to get there.

Building Site

The building site has been chosen in the beginning of the project with the suggestion from “Department of City Planning at City of Helsinki, based on the preferences of the clients from “My-Home Project” (good public transportation to the city, urban context). Ulla Kuitunen, city planner of City of Helsinki, suggested four possible building plots in Kruunuvuorenranta and the author chose the one situated close to the future tram stop. The area is now under development to become a new residential area in Helsinki.

(left) future image of Kruunuvuorenranta

(right) 4 suggestions by City of Helsinki for the new cohousing block (red circles)

[58]

Helsinki

The capital city of Finland, Helsinki, is located in the middle of the south shore of the country.
Even though Finland has achived a certain level of economic development during the 20th centry, the urbanization in Helsinki area is still ongoing.
One reason for this is relatively lower density of habitation compared to other capital cities. In 2016, the population of Helsinki metropolitan area is reaching 1.5 million and is constantly growing. So, the city goverment of Helsinki has planned to densify the city to prevent urban sprawl.

Kruunuvuorenranta, Helsinki

As a new housing develoment area planned by the City of Helsinki, Kruunuvuorenranta is a potential place where the future clients would be able to start their new habitat project . The site is about 4km away from the Central railway station of Helsinki.
At the moment, it takes 40min by public transportation to reach the railway station. However, after the construction of the new bridge connecting Kruunuvuorenranta to the city centre, the trip will be shortened to approximately 20min by tram or bicycle.

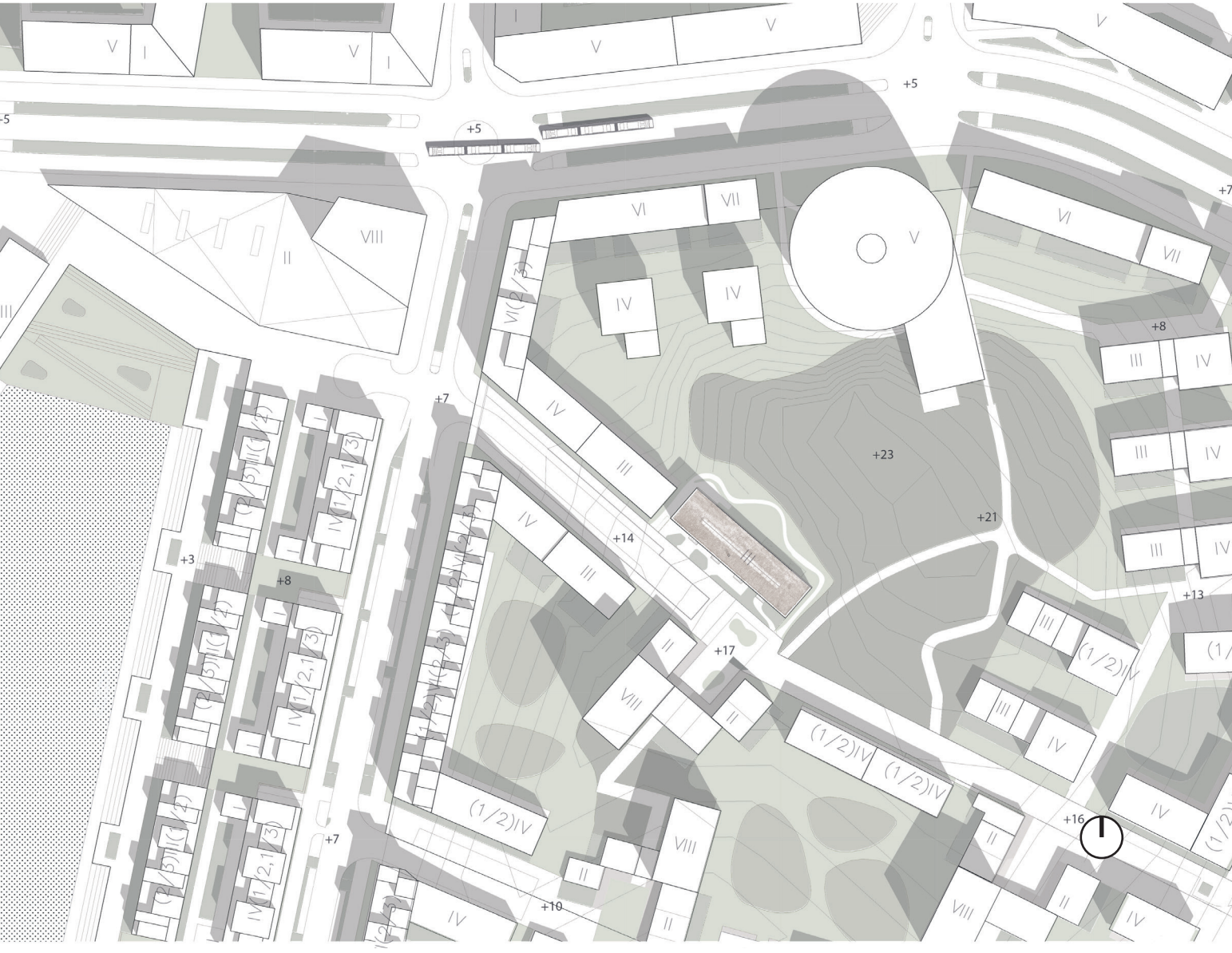
Infomation of Kruunuvuorenranta

Residential Floor Surface: 580,000 k-m2
Office and business floor surface: 55,000 k-m2
Residents: 12,500
Jobs: 700-800
City block and traffic areas: 95 ha
Recreational and nature areas: 106 ha
Public services: Two schools, six day-care centres, sports hall and sports park, a beach, harbour for small boats, three grocery stores, restaurants, cafe and ground-floor business premises for small shops

(top left) City of Helsinki, Kruunuvuorenranta marked with a circle

(right) View from the building site towards the city centre of Helsinki

[58] Kruunuvuorenranta 1:20000, Kaupunkisuunnitteluvirasto, Helsinki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(1/2)IV
(1/2)IV
(1/2)IV

Location of the site

The building will be situated on the south-west side of the rocky hill (23m above sea level). The hill behind the building allows a view to the centre of Helsinki across the sea (p.59).

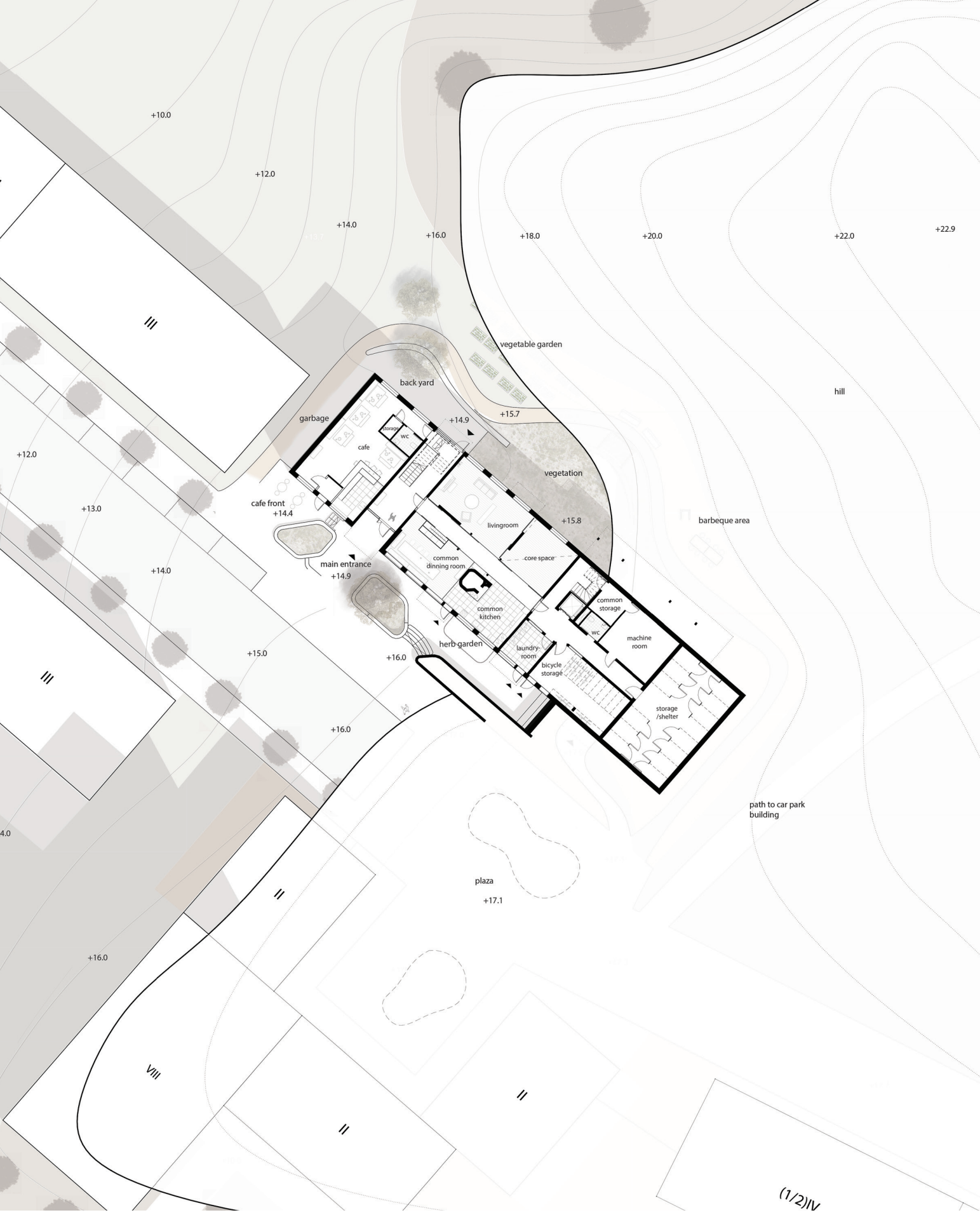
Transportation

According to the city planning of Helsinki, the new city plan would discourage travel with car in the city and the new bridge allows only pedestrians, bicycles and trams. Hence, the useage of the public transportation would be promoted and the residents of Kruunuvuorenranta would be able to reach the city centre in 20min either by tram or bicycle. The tram stop is approximately 200m away from the building site.

In the northern side of the hill, there is an oil tank shaped public car park building. This new structure merged in the site context and takes the demand for car parkings of the new buildings around. The parking building is easily reachable by the path on the east side of the site through the green area. In the new cohousing, none of the residents are supposed to possess private vehicles as a sustainable lifestyle is imagined. A temporary stop for taxis and other logistics is available in front of the building.

(right) Project site, Kruunuvuorenranta

(left) site map 1:2000


+10.0
+12.0
+14.0
+16.0
+18.0
+20.0
+22.0
+22.9
III
vegetable garden
back yard
hill
garbage
+14.9
+15.7
storage
wc
cafe
+12.0
vegetation
cafe front
+14.4
+13.0
+15.8
barbeque area
livingroom
core space
common dinning room
main entrance
+14.9
+14.0
common storage
common kitchen
wc
machine room
herb garden
laundry-room
bicycle storage
+15.0
+16.0
storage /shelter
+16.0
path to car park building
plaza
+17.1
II
+16.0
VIII
II
II
(1/2)IV

Approach to the building

When people walk up the hill, they can see a red building. As they get closer, there is a cafe welcomes everyone. The cafe sits 0.6m lower than the residential part.

(right) uphill to the building

(left) level 1, site plan 1:400

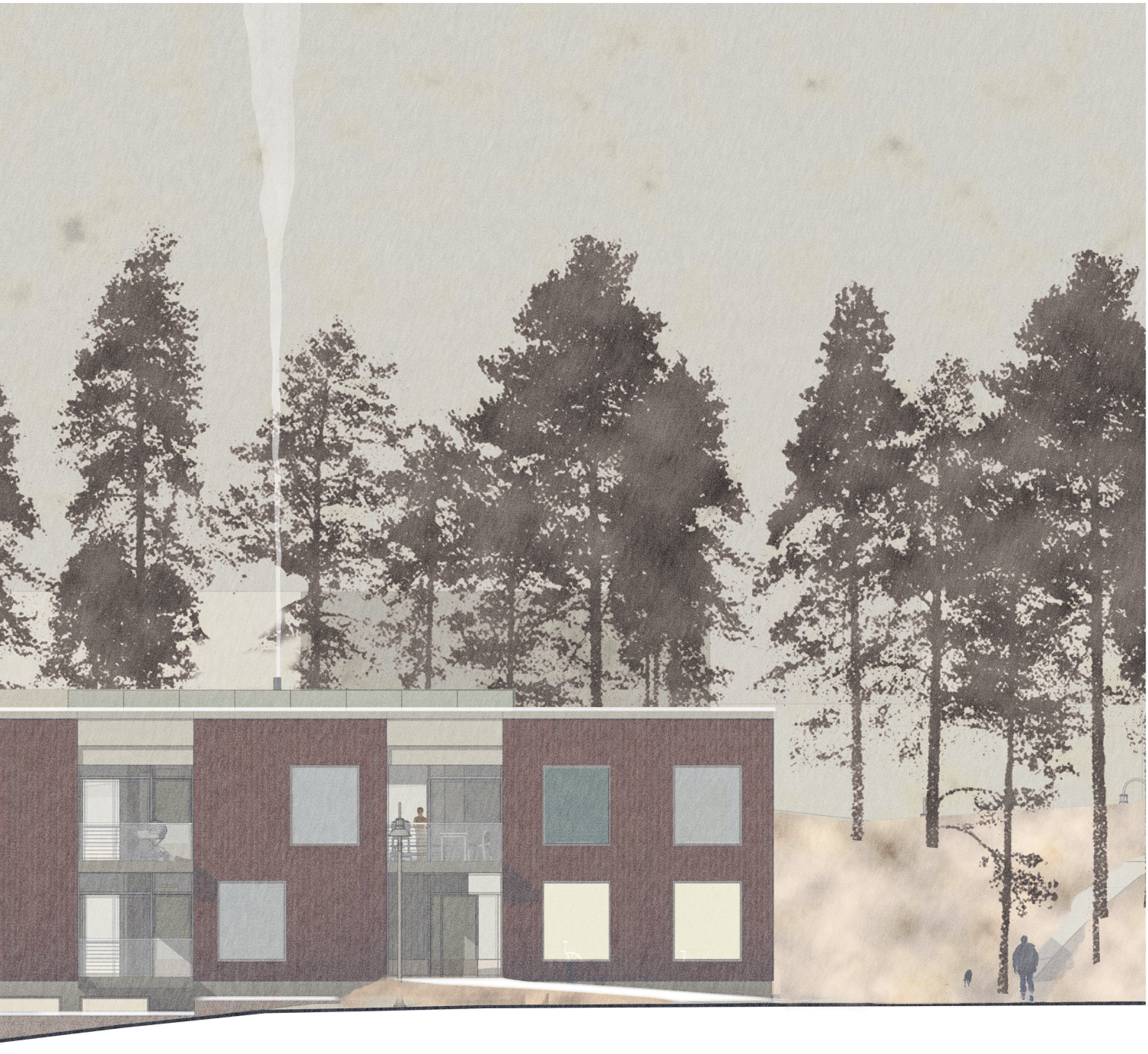

+10.0
+14.0
+18.0
+22.0
+22.9
+13.7
III
vegetable garden
hill
+17.0
+12.0
U1
+18.0
U2
vegetation
+16.0
cafe
+14.4
barbeque area
+14.0
+15.0
terrace
+17.9
sauna
shower
shared livingroom
+18.0
cooling room
herb garden
U4
U5
+15.0
+20.0
+16.0
+18.0
secondary entrance
winter garden
path to car park building
+18.0
II
plaza
+17.1
+16.0
+17.1
+17.5
VIII
II
II
+17.0
+16.6
+17.7
(1/2)IV

People from the neighbouring area will face the cohousing from this square (28 x 15m). The trees in the courtyard give intimacy to the residents. The small plaza could host event such as summer festivals. Thus, most of the balconies in the cohousing face here and residents often look down what is happening in the plaza.

(right) a view from the square

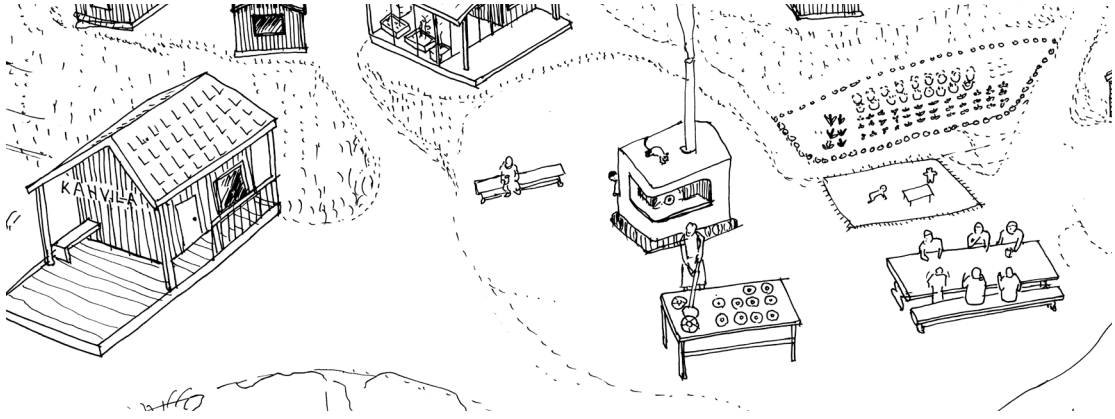
(left) level 2, siteplan 1:400


KAHVILA



south elevation 1:150

The cafe on the conner of the building is a place open to anyone. Not only residents, but also neighbours are always welcome to this place.
If one gets to know residents living in this red wood building, one might get a chance to visit more spaces in this cohousing.

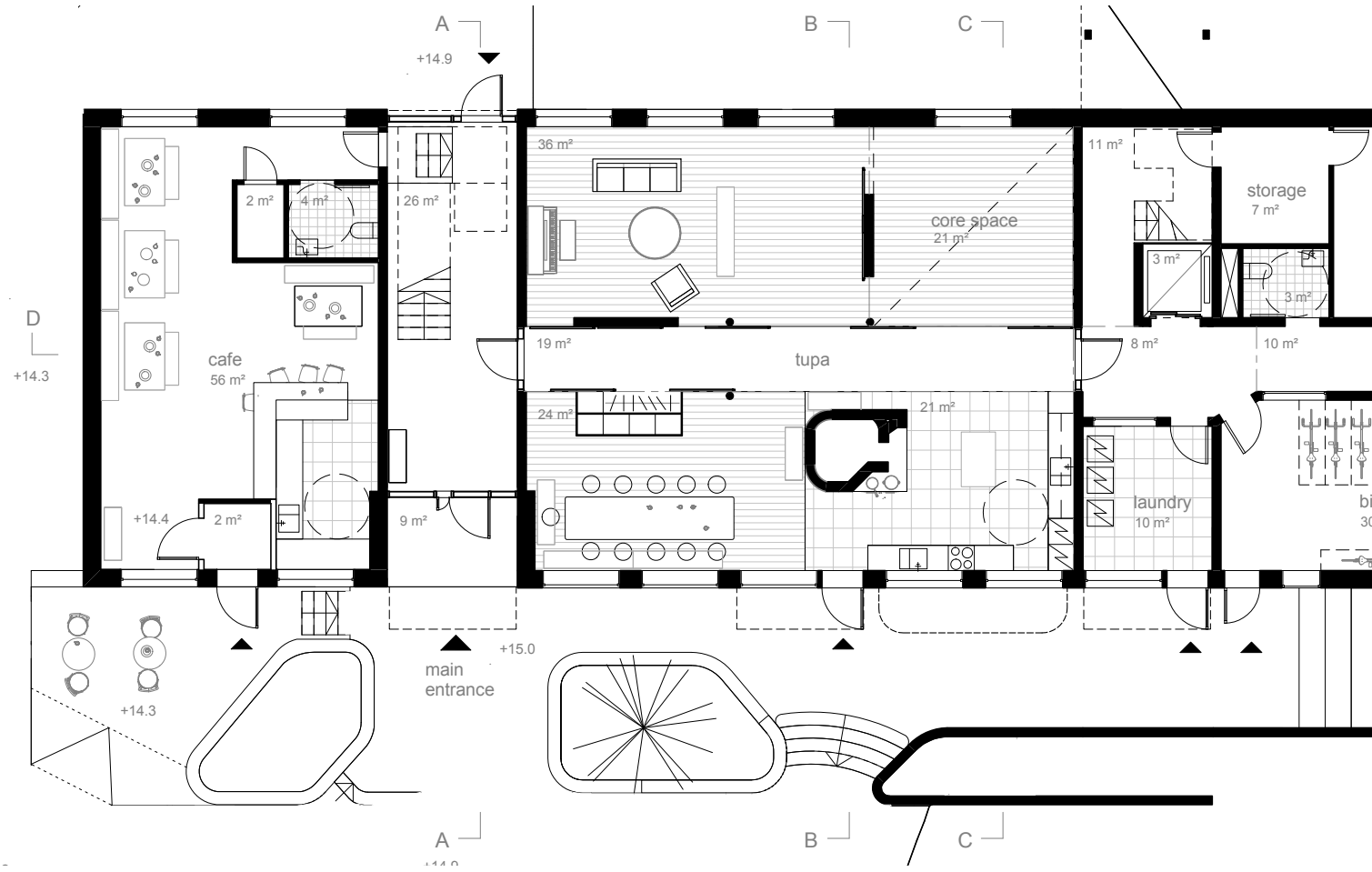


Level 1: Opened to people

The main entrance is on the first level next to the cafe. The visitors will face the entrance and wait for someone to open the door.
However, as this cohousing is like a village, rather than a door to a private home, the entrance can be a welcoming place to stay for a while.

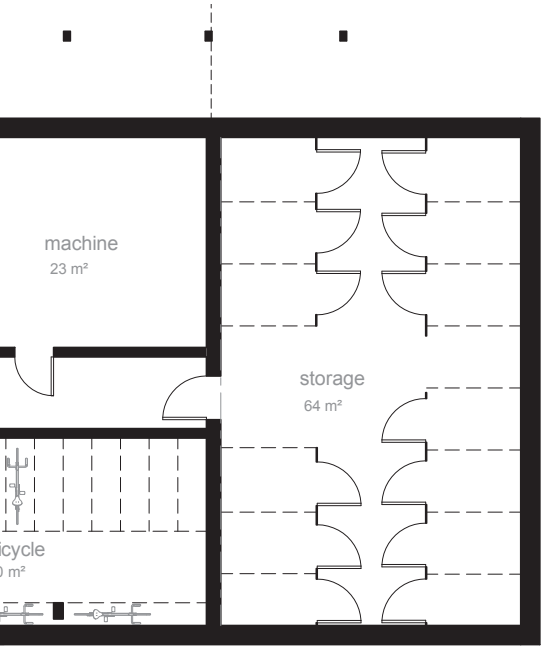
(left) cafe with cohousing

(right) imaginary drawing, semi-public places



(top) level 1, floor plan 1:150

(right) main entrance



Level 1

Most of the visitors and residents would pass the first level. As the whole floor is semi-public realm, there are always some people here to meet.

When one get in to the building a big scale of kitchen, diningroom and livingroom are found. They are connected to each other but can be seperated or regulated by sliding walls when it is needed. Hence, the doors prevent from one bustling dominating the whole space.

(left) core space

(top) communal kitchen

(bottom) section C 1:200

Common Kitchen

Here will be one of the most adorable places for dwellers. Not only they can meet the neighbours but also they can enjoy a fresh meal and tea here. The ground floor is welcoming at any time.

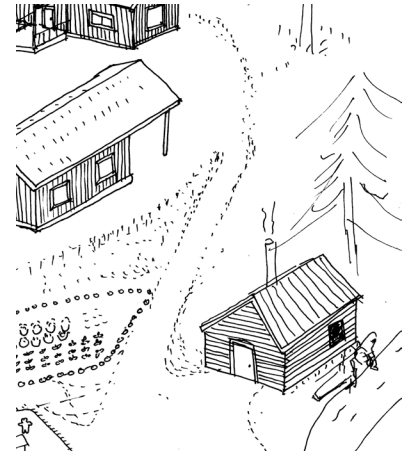
Core Space

Life can be simply repetitive when there is a sequence of practical routines. In the core space, the dwellers are able to have a morning ritual with meditative activities.

In other times, the common living room can be extended to here with the opening of sliding walls. Then, the space could host diverse activities.

communal space (tupa)

It is a big open space but can be partly closed and have different gradations:
bustle and calmness
brightness and dim!

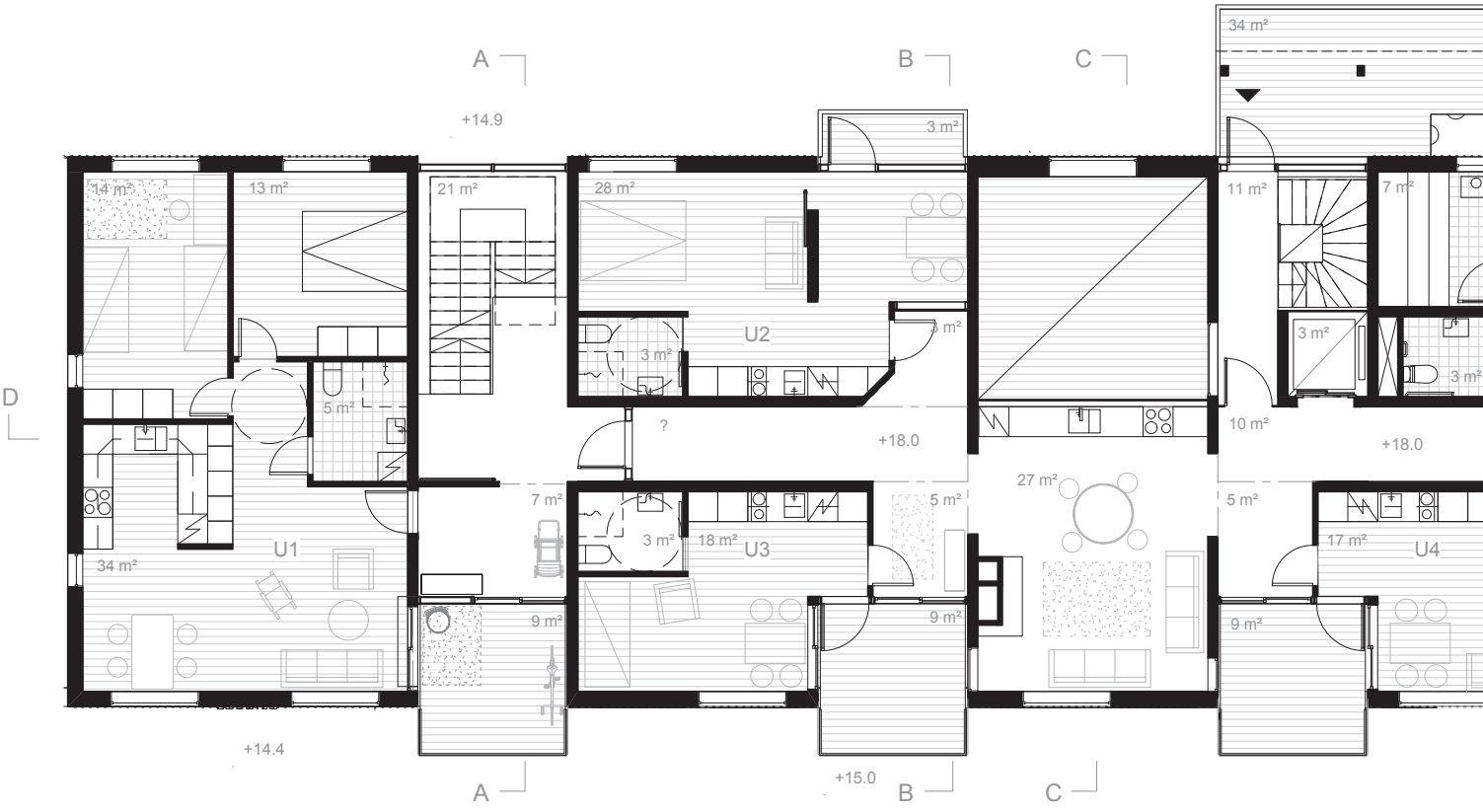


Level 2 : Limited Open

Some spaces are quiet and less burstling as there is a moment with a wish to be alone or just to be with one good company.

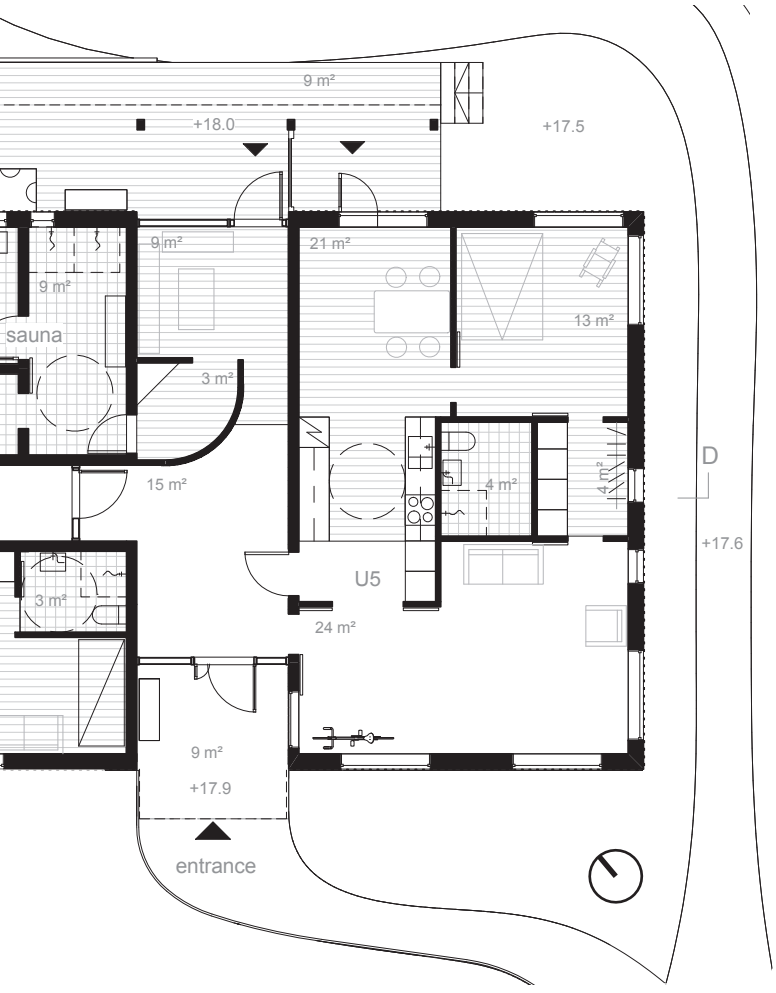
(left) north elevation 1:150

(right) sauna place, imaginary village



(top) floor plan, level 2 1:150

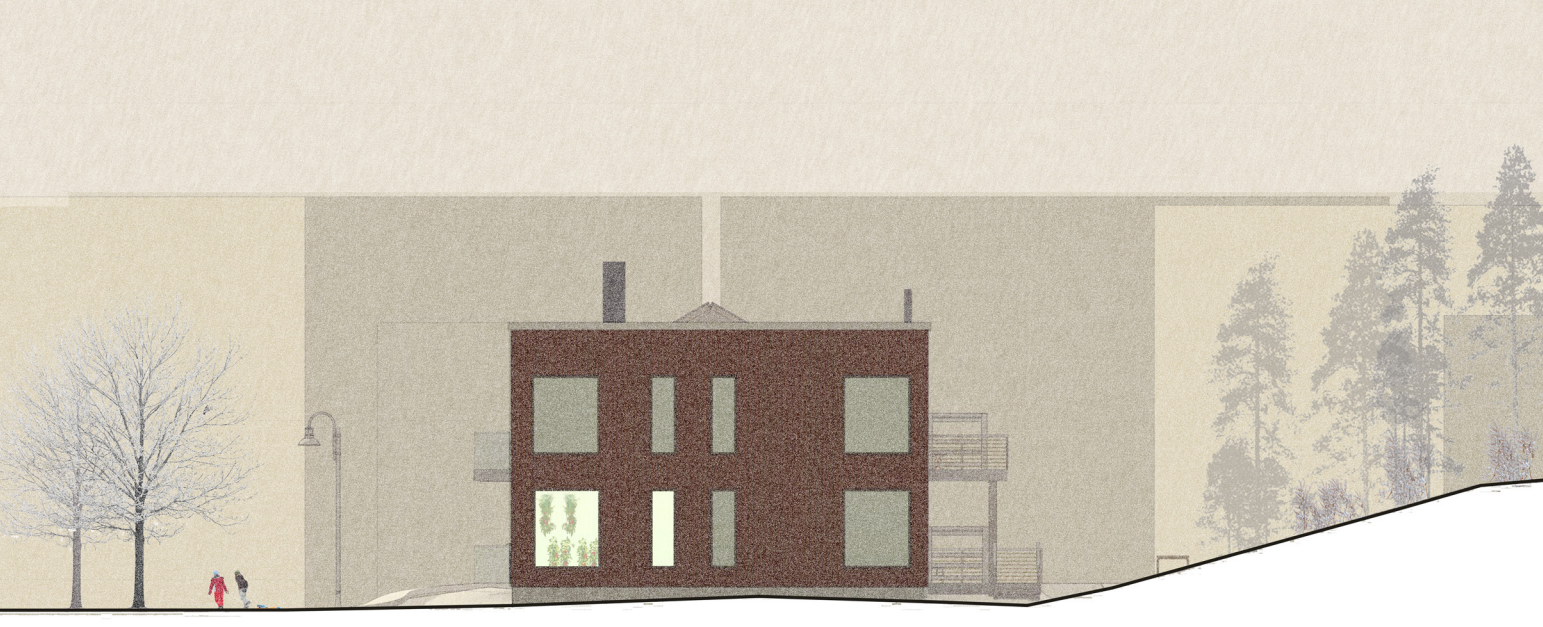
(right) east elevation



Level 2

Here is the residential floor but also a place for small gatherings such as barbeque, sauna and a cup of tea in the winter-garden. Neighbours living around might easily drop by, if a friend is there because this level faces the courtyard.

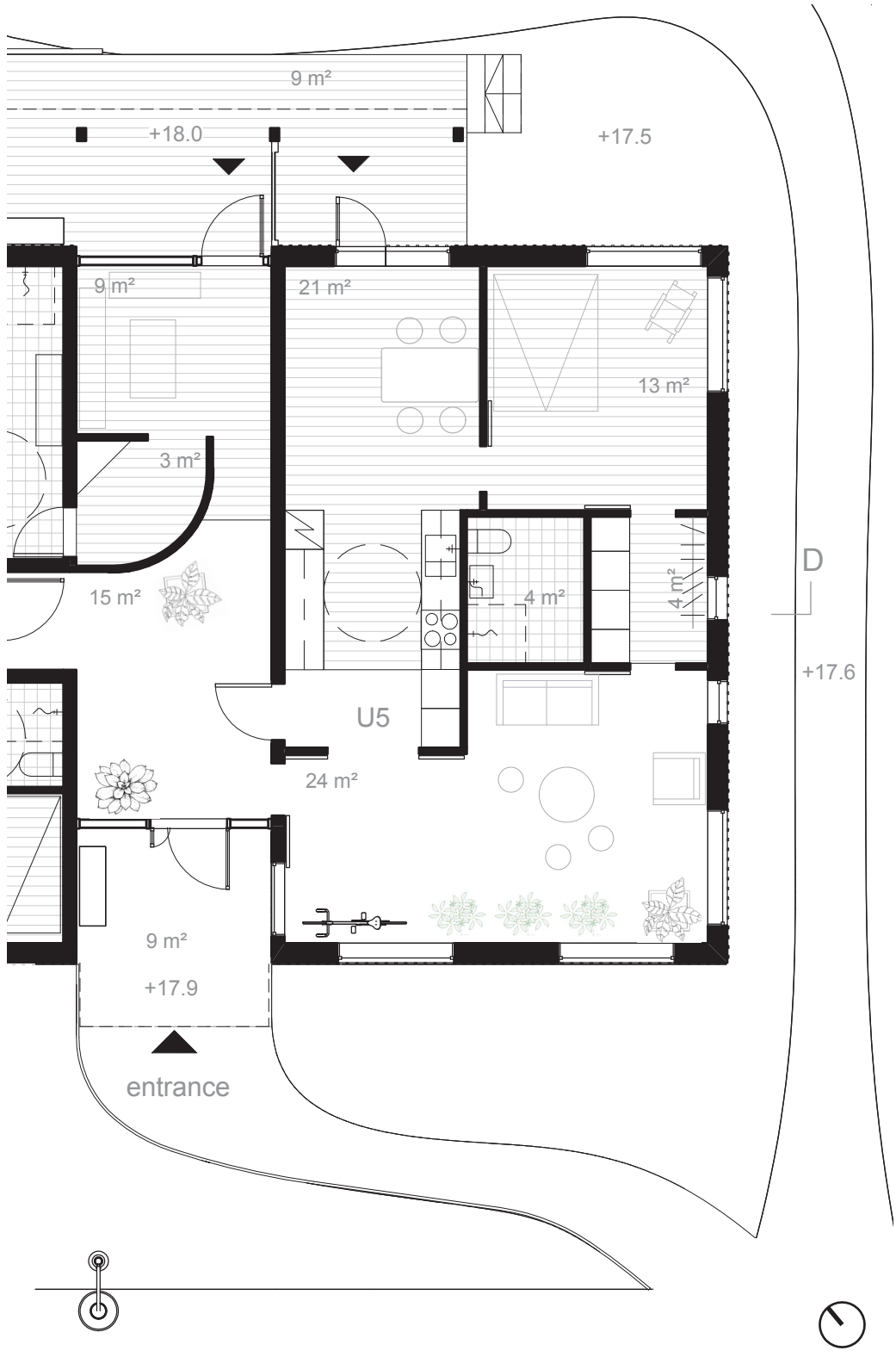
Whereas the south part of the building is bright and close to neighbours, the northern side is facing nature.

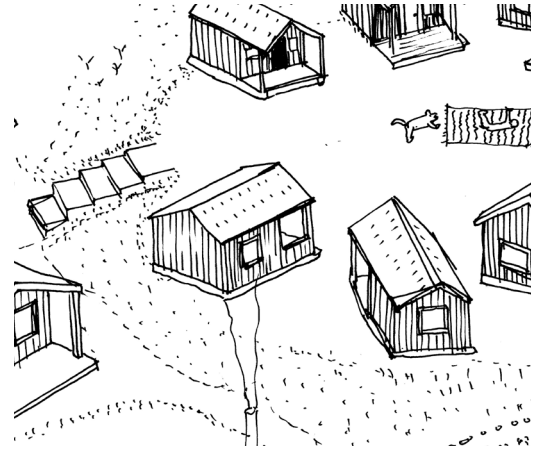


(top) entrance level 2

(right) U5 floor plan 1:100

The wintergarden is facing the most sunny conner of the building and exposed to the neighbours. This garden is a semi-private place managed by one of the houselods here.


9 m²
+18.0
+17.5
9 m²
21 m²
13 m²
3 m²
15 m²
4 m²
4 m²
D
+17.6
U5
24 m²
9 m²
+17.9
entrance

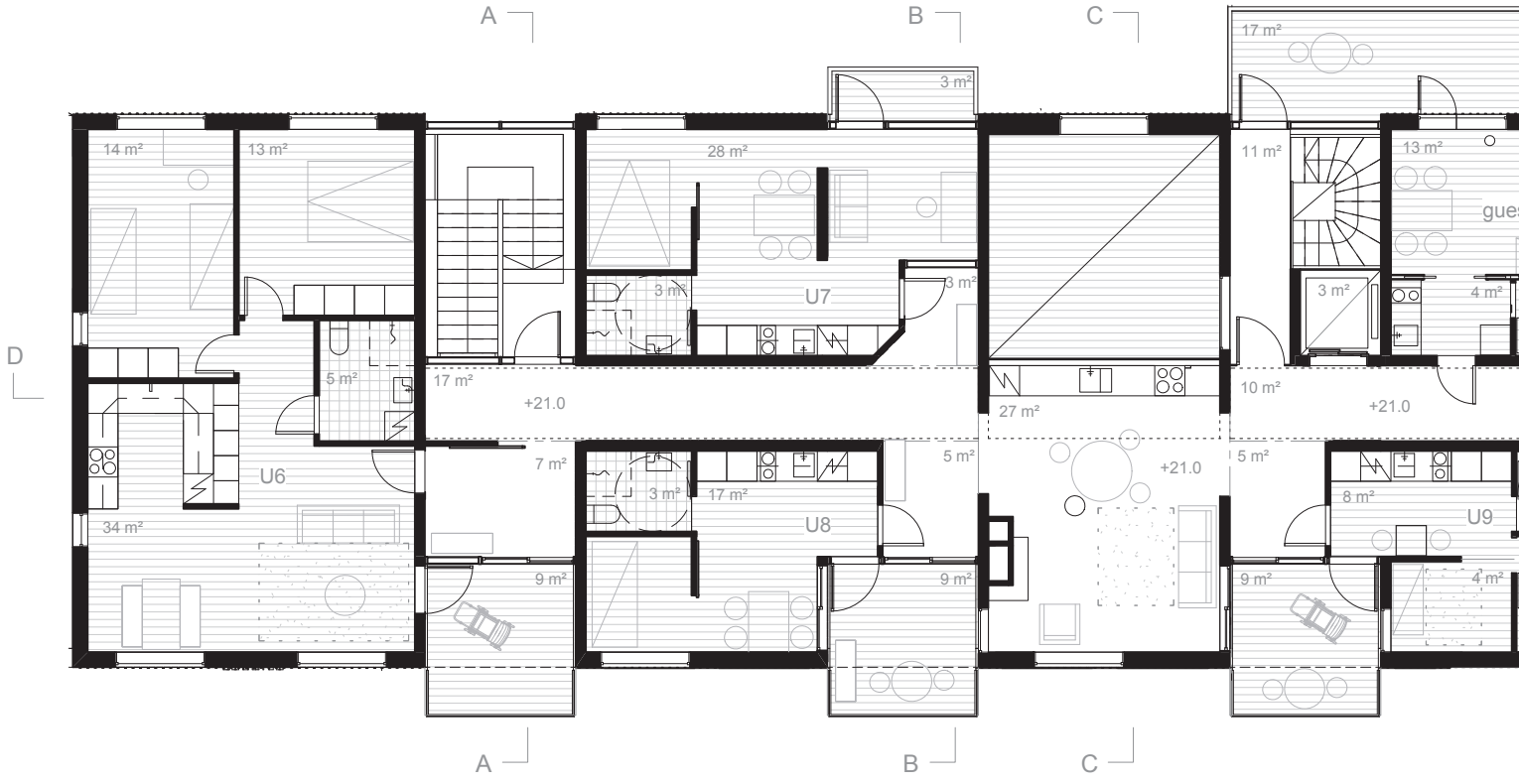


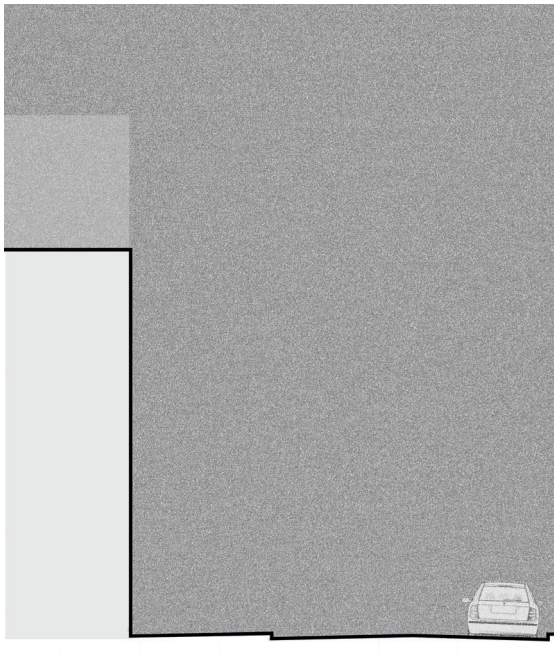
Level 3 : To Private Spaces

Our home is the place where we take care of ourselves. Also, for some people there are family members to take care of.
But what kind of relationship our own space, our home, will have with the world?
That is also a question of how we enter in and step out from our home.

(left) front space of studio unit

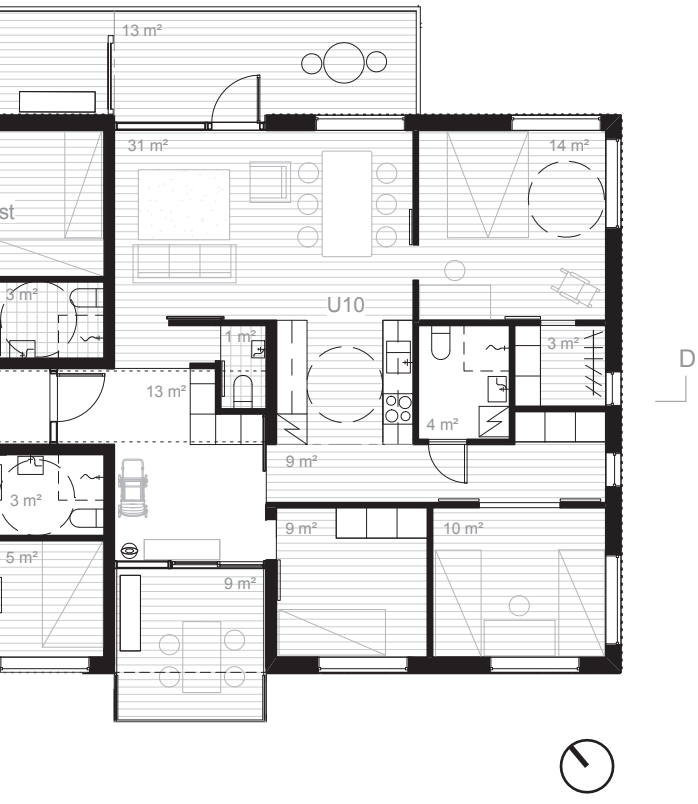
(right) imaginary village





(top) floor plan, level 3 1:150

(right) section A, 1:200



Level 3

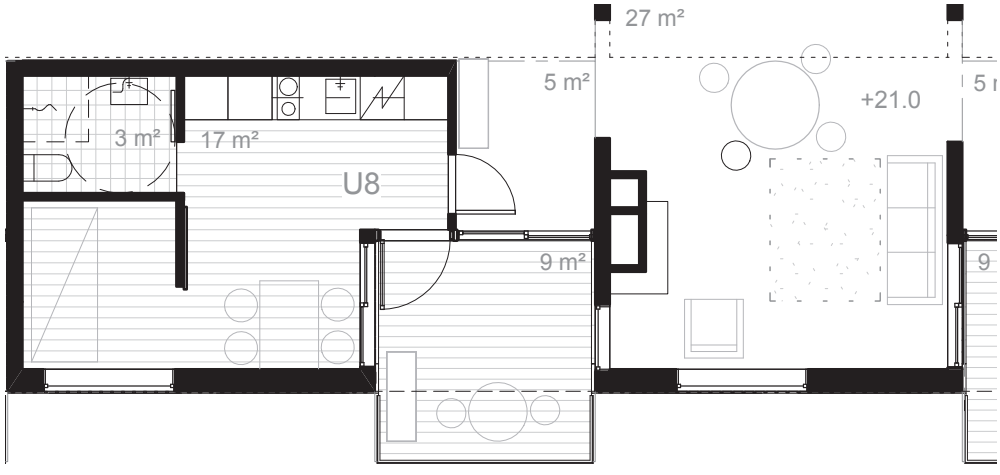
It is a place for comfort and rest. Nevertheless, the residents are not limited to their own units anymore. With a pair of slippers or barefoot, it would be nice to roam around and join for some looking at a wood fire.

How about having fresh air on the balcony and look at your home from outside surrounded by wood siding?

In this shared livingroom, it would be enjoyable to see both sides of the building, nature and the road side.

(left) shared livingroom

(right) shared kitchen


27 m²
5 m²
+21.0
3 m²
17 m²
U8
9 m²

Minimum possession

Looking at the floor plans, we find that each household has relatively small space compared to apartments of these days. However, in the past, people possessed a small number of gadgets. In other words, people did not need space for refrigerators, microwaves, big beds and sofas. Even car-parks take huge spaces as much as building area. In this imaginary village, people will share spacious common spaces, and the buildings will cast less shadow to the neighbourhood.

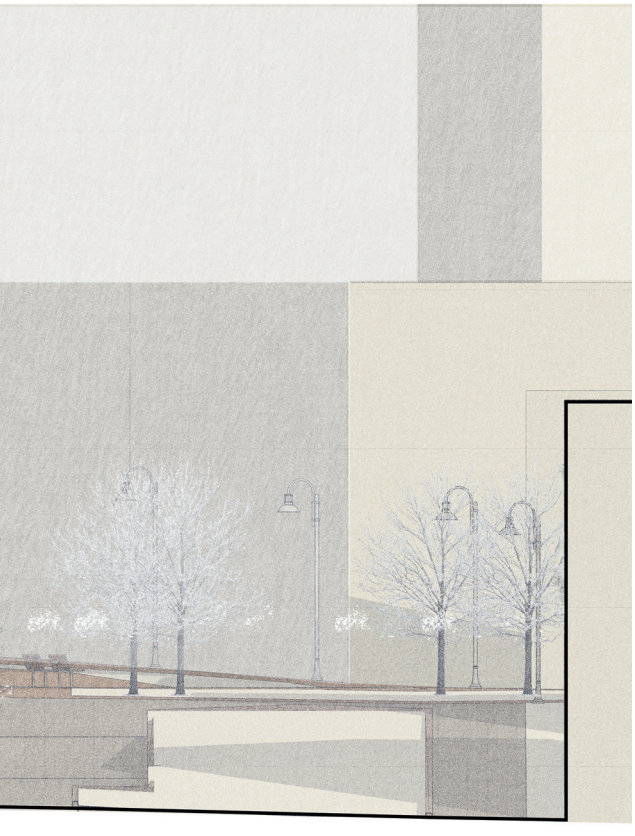
Owner designed house

When a dweller has a portion of ground that he or she is responsible of, the management can bring most suitable results for them. Therefore, having a front yard at home gives positve influence to the outside of your home also.
All the houses in the sketched village are might built by each individuals. All single parts could be customized by own dwellers and they take whole responsibility of surrounding area. This could be the main way how the housing area can have a warm atmosphere.

(top left) U8 perspective

(bottom left) U8 floor plan, 1:100

(top right) section B, 1:200



Conclusion

In the last part of this thesis, a storyline tells about the spatial freedom in the future cohousing.

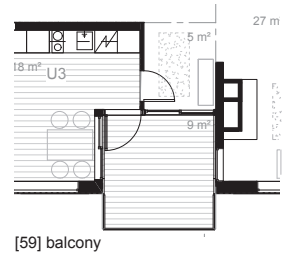
(left) west elevation 1:200

An Evening

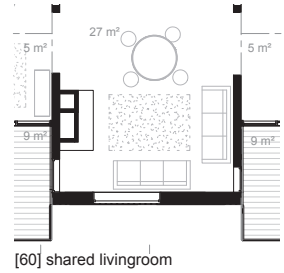
The unit number 3 on level 2 is the place where he lives. He has a big balcony in front of his home. It makes him often go out to the balcony because there are different things to see. He looks over the plaza and takes care of the plants in his pots. He often checks the flowering plants, because he sees them whenever he goes out and comes back to home. Also, the people passing by see those flowers.

After his work, he often plays guitar in the shared livingroom. Actually nobody is bothered with the practicing sound and it is quiet there in general. When his fingers get tired with the playing, he brings the guitar to the wintergarden. This place is taken care by an elderly couple living behind the garden. There are many different kinds of vegetables growing all year around. The door is usually open and one is free to have some tea with the herbs there. Actually this garden is a wonderful place to be in peace and spend time alone. In his opinion the garden is the most quiet and warm space in this building.

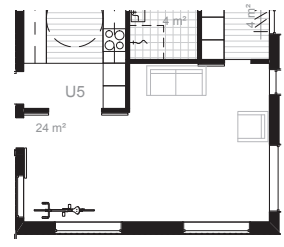
Soon, when it becomes 16.30, he needs to go down to the first floor to prepare the dinner table. He got the message that there will be 12 people eating together this evening. He is not good at cooking, but likes to help with preparing the food. This evening, a couple living in front of his home makes spinach lasagne.



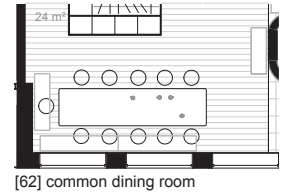
[59] balcony



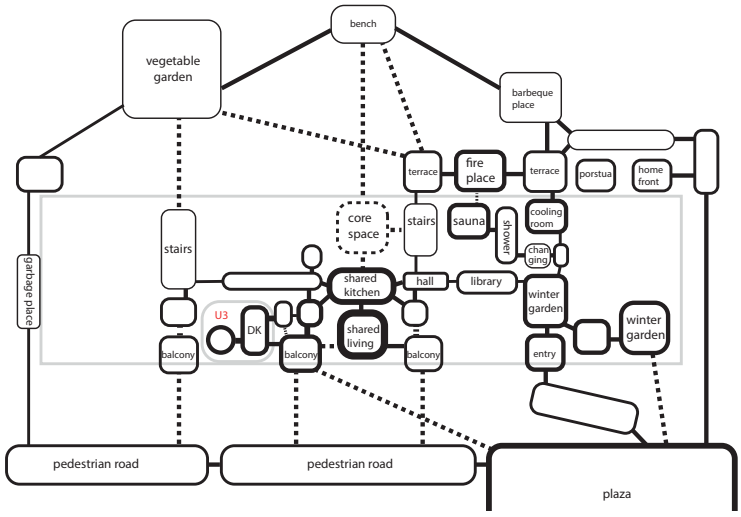
[60] shared livingroom



[61] winter garden



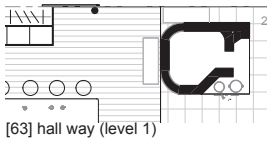
[62] common dining room



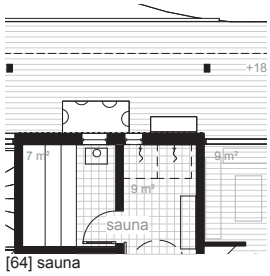
(right) available spaces in level 1 for U3 resident

(left) available spaces in level 2 for U3 resident

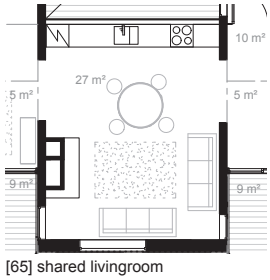
tupa



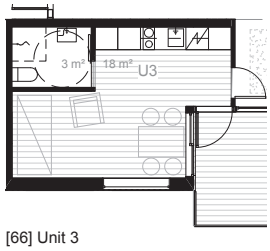
[63] hall way (level 1)



[64] sauna



[65] shared livingroom



[66] Unit 3

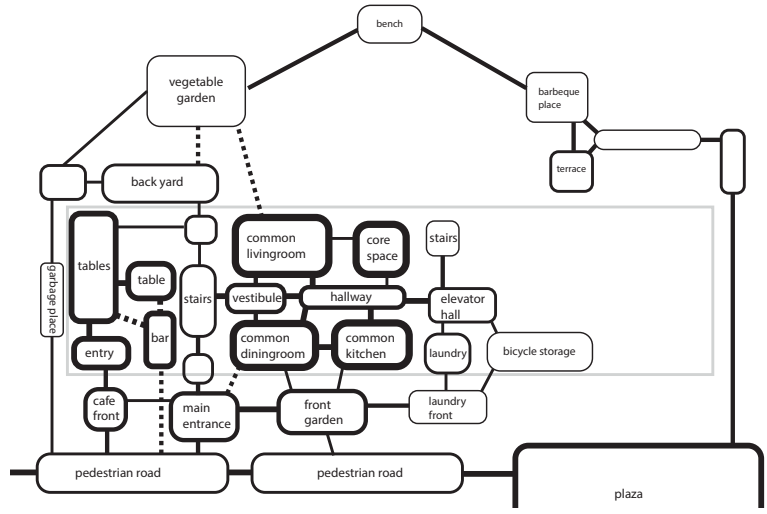
In 30min the food will be ready. The stone oven heats up the whole floor and he loves to lay back against the oven at that time.

There is one thing he does everyday when dinner is almost ready. He brings the charcoal from the oven to the sauna. Everyone is happy that the sauna is warm after dinner time.

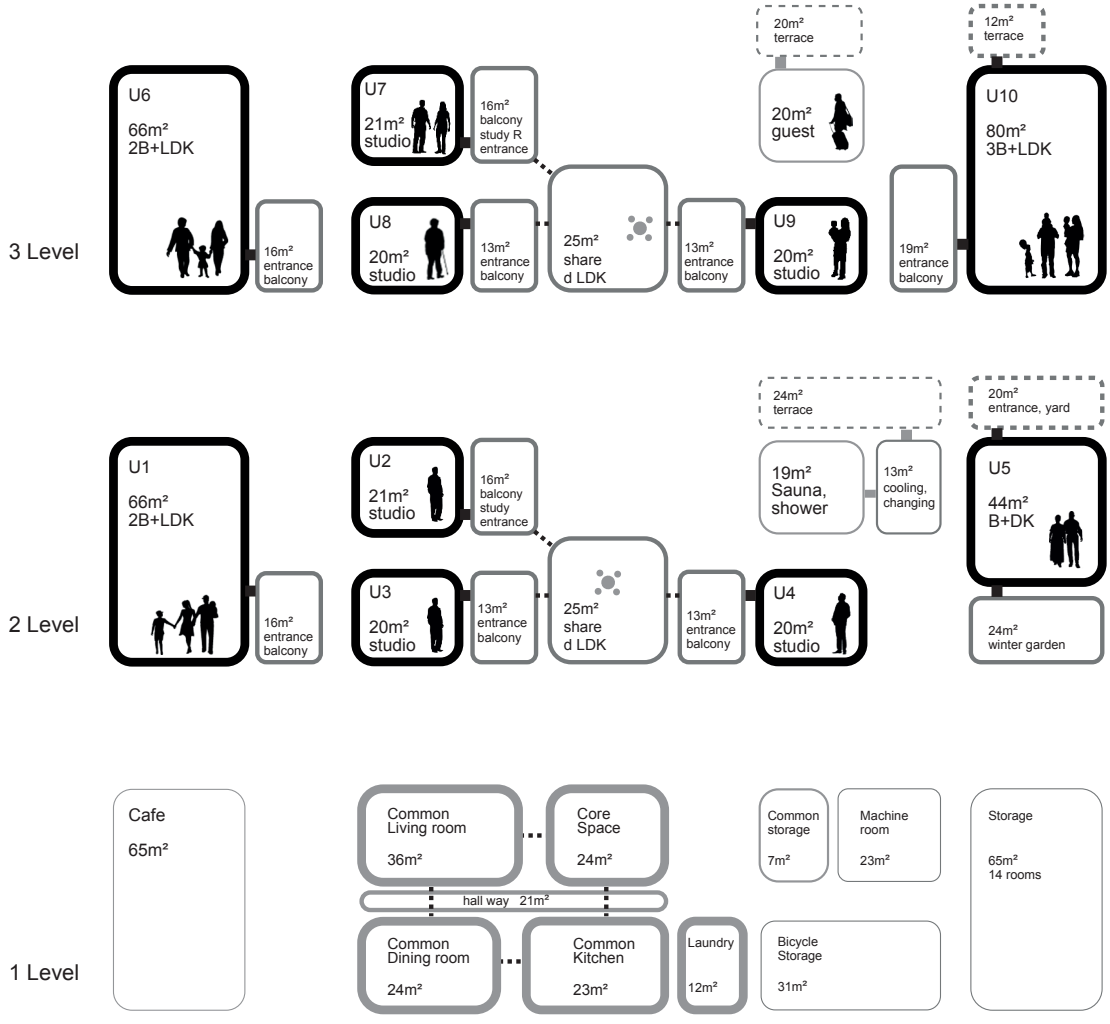
The dinner always starts at 6pm. He does not speak well, but it is quite fun to listen what people say during the meal time. Sometimes one topic from the dinner table continues in the sauna. Today, men have the first sauna turn until 9pm. He believes that he learns everyday by listening to what other people talk about. When he feels stuffy in the sauna, he likes to go to the terrace just to look at the trees.

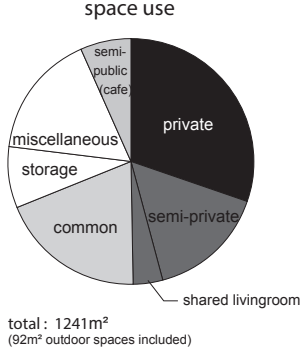
When it becomes 9pm, children start go to sleep and all floors are suddenly quiet. When he goes back to the livingroom in front of his home, the gentleman living next door asks for a cup of tea and asks about how to play the guitar. He shows how to make proper sounds.

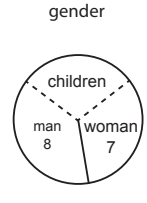
It is time to go to sleep and he says good night to the neighbour next door and goes to his home. He looks at the flowers once again before sleep because they change all the time.

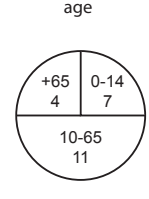


Space diagram









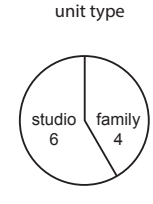


Table of space use

common spaces

level	space	area (m^2)
1	common livingroom	36
	common diningroom	24
	common kitchen	23
	core space	24
	hallway	21
	laundry	12
2	sauna, shower, toilet	19
	cooling, changingroom	13
3	guestroom	20
	guest terrace	20
	sum	236

shared spaces

level	space	area (m^2)
2	shared LDK (1 FL)	25
3	shared LDK (2 FL)	25
	sum	50

storages

level	space	area (m^2)
	bicycle	31
	storage (main)	65
	common facility storage	7
	sum	103

cafe

level	space	area (m^2)
1	cafe	63
	cafe front	20
	sum	83

apartment units

level		type	prive area (m^2)	semi-prive area (m^2)	sum area (m^2)
2	U1	2B+LDK	66	16	82
	U2	studio A	21	16	37
	U3	studio B	20	13	33
	U4	studio C	20	13	33
	U5	1B+DK	44	44	88
3	U6	2B+LDK	66	16	82
	U7	studio A	21	16	37
	U8	studio B	20	13	33
	U9	studio C	20	13	33
	U10	3B+LDK	80	31	111
	U1-10		378	191	579

miscellaneous

level	space	area (m^2)
1	entrance (west), stair hall (west)	33
	stair hall (east), elevator	18
	hallway to main storage	12
	machine room	23
2	stair hall (west)	18
	hall way (west)	12
	stair hall (east), elevator	18
	hallway (east)	12
	entrance (east)	11
3	stair hall (west)	18
	hall way (west)	12
	stair hall (east), elevator	18
	hallway (east)	7
1,2,3	sum	202


+26.4
+24.0
+21.0
+20.7
+18.0
+17.6
+15.0
+14.3
+14.4

section D 1:150

view from the hill

Acknowledgement

Until this stage of my study, which I really have been enjoying whole my academic years, it was possible with the supports from many people around me.

First of all, I always like to mention that I could continue my study in Aalto University due to the virtue of the Finnish education system which gives equal chances to study regardless of nationality. I am very thankful to all the people who were the backbone of this matured socio-democratic society, and the education system of Finland.

Therefore, during the last three and half years, I have been with a series of great opportunities. This experience became a big motivation to look after the society more than before. Even though the process of this thesis publication was demanding, I could enjoy the each moment because of those reasons.

Lastly, but most importantly, there was my family Catherine and Aava who gave me everyday energy to overcome many challenges.

Epilogue

The analysis method that I found with using the ‘Network Theory’ was an enjoyable way to visualize the space network in social relation context. Even though I started to try this tool in the middle of this thesis, it gave me several ideas to bring better building plans. Hence, I cannot avoid to say that the process of this work was not like the order of the chapters. There were dozen times of self-feedback on the building planning after I finish the schematic planning of the building. Therefore, the results of the analysis could not fully be applied on the new building design. Nevertheless, the process of the analysis gave me clues for what are the patterns for socially enriched architectural spaces. Also, imagin the possiblity to use this tool as one way tovisualize spatial networks and freedom.

In near future, I wish to begin this kind of cohousing project for my family and for other people who wish have an enjoyable life with their neighbours.

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Illustrations

The pictures not mentioned here are belong to the author.

[1] Kallio, Sorbus, Vaasankatu dwellers outside the Sorbus art gallery. https://www.flickr.com/photos/sorbus-galleria/27231503841/
[2] PKN (Pertti Kurikan nimipäivät), http://www.nrgm.fi/artikkelit/viisi-kotimaista-punk-yhtyetta-joihin-kannattaa-tutustua/
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[26] Heinäkengän pirtti, Jämäsä Juokslahti. Source: p. 224 Kirveennummi Anna & Räsänen R. (2000) Suomalainen Kylä, Suomalaisen Kirjallisuuden Seura, Helsinki.
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Living Together

Threshold: Spaces between private and public realms in cohousing

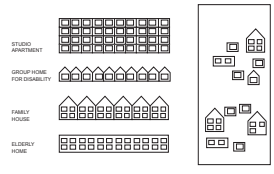
Background

Apartment in City

During the 20th century and even recently, there has been countless constructions of apartment buildings with the increasing population and urbanization. For these reasons, architects and city planners have had chances to reshape the living spaces of citizens with the blocks of apartment units. However, the apartments tend to limit the boundaries of the dwellers' life.

Vulnerable Group

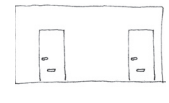
For this reason, architects are in necessity to consider the people who have difficulties with living in apartment buildings. The people without '*necessary activities' (Jan Gehl)* experience a big threshold to go outside from their units. There are three groups who will be taken into account in this paper: children, elderly and people with intellectual disabilities.



Integrated Living

The vulnerable groups would wish to have more casual meetings in their neighbourhood than others. Among various types of cohousing, integral housing *(Schittich Cristian)* could be a proper solution for those vulnerable groups.

Integrated Living means different groups of the population living together under one roof, and, as such, different residential forms in the same building. The goal is mutual enrichment and support.



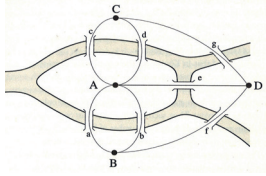
Threshold : In between

People started to live densely even though the funcionality of an urban life systems may not be proved. Each citizen has not designed his/her neigbourhood but occupies it like a temporary dweller. It is easy to find dry and cold neighbourhoods in cities, especially where there are many rent apartments and studio apartments.

Methodology of the Analysis

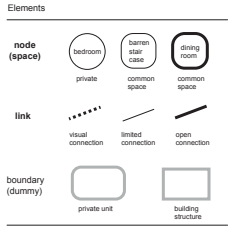
Network Theory

The author uses the 'Network Theory' as a tool for visualizing the different gradations of private-public realms in cohousing spaces. In the analysis of community oriented housing, this theory will help to find certain patterns for active communal spaces.



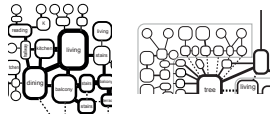
Application of Network theory on spatial network

In the network theory, the elements (node and link) do not have a scale because the analysis focuses on the network itself in general. However, in this paper, the author applies different scales on the 'nodes' (spaces) and 'links' to visualize the quality of space and connections between different spaces.

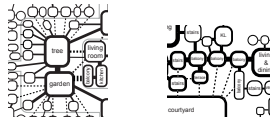


Summary of Spatial Analysis

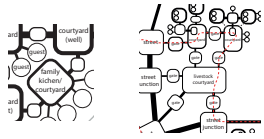
1. The examples of community oriented housings have several degrees of threshold spaces between private and public realms.



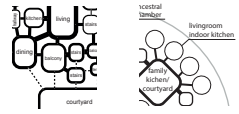
2. The courtyards include several households' semi-private zones. Therefore, the communal area has a high possibility for casual events.



3. All the courtyard (communal) spaces have at least two gates which allow the crossing of the spaces.

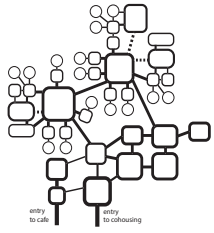


4. The living quarters (kitchen, dining places) of each housing are facing to communal courtyards. It gives visual cue for possible events in the communal spaces.

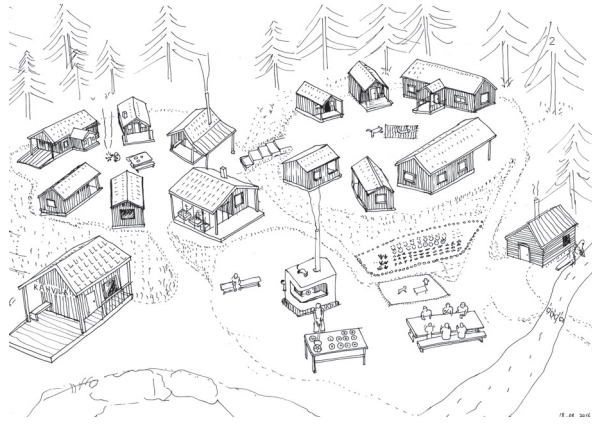


Imaginary village

The drawing on the right shows an imaginary village designed for 22 different human characters. They are living in small houses consisting of 10 different families. The households share a sauna, a guest house and a big kitchen. Ten houses are divided into two groups and each group shares a yard. The space organization of the village is based on the summary of the analysis.
In these detached houses, dwellers do not feel isolated because they can easily access to outside and communicate with their neighbours. When they see each other in the courtyard, they are able to be in a personal realm.

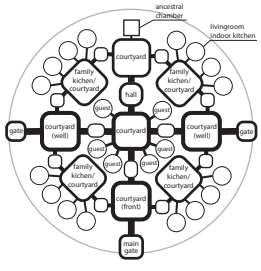


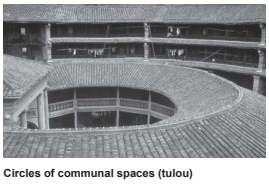
SPATIAL NETWORK



IMAGINARY VILLAGE

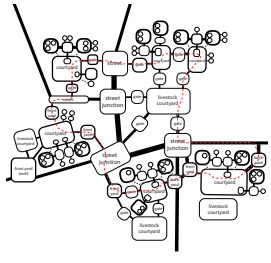
Analysis of Cohousing Examples

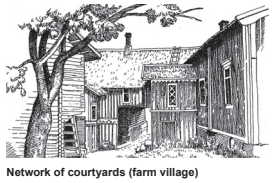




Circles of communal spaces (tulou)
Zhenchenlou, China

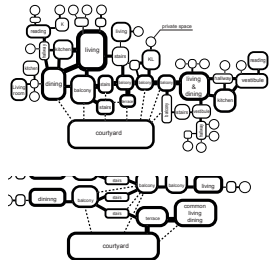
In tulou, all the communal spaces are situated on the ground floor and they are linked to each other, whereas every private rooms are on 3rd and 4rth floors.
On the ground floor each courtyard has a different grade of openness to public space. Firstly, each family courtyard has connections to other courtyards which are shared with another family. Furthermore, all the three courtyards (with well) near gates are visually opened to the central courtyard through the gates.





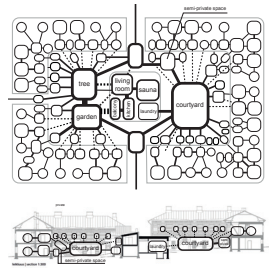
Network of courtyards (farm village)
Suontaka, Finland

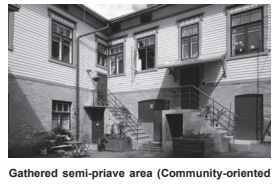
As like Fujian tolou, the family courtyards in Finnish farm village, Suontaka, has a similar pattern of semi public spaces: Veranda (semi-private) - courtyard - front yard (or gate) - street junction - back yard - courtyard - veranda
Also, each family courtyard has two openings to adjacent housing plots.



Vertical and horizontal Network (Cohousing)
Wohnüberbauung Kraftwerk 2, Switzerland

Terraces and stairs in this building make small promenades of semi private spaces. Even though it is a seven story building, the terraces connected by half-story height stairs allow visual connection from a floor to another floor. Also, from each terraces, there are easy connections to indoor communal spaces (living or dining room) of each unit. These communal terrace and stairs are possible with seperate evacuation stairs cases in the middle of old building structures.





Gathered semi-priave area (Community-oriented housing) Annikki, Finland

In this more than 100 years old renovated building, all the households have semi-private realms in the form of a ground patch or stairs in front of each home. Hence, the probability of casual meeting among the residents are high in their courtyard.
Also, kitchens in most of the households are facing a couryard and are visually connected. This means that residents staying in home are ready to get involved in any events in the courtyard.

Space program

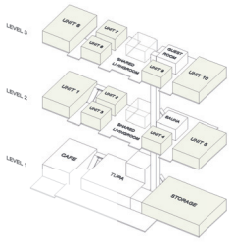
The building has three levels and each floor has different gradation of opennes to public. The first level has common spaces with cafe which is open to everyone. The two upper floors are each consisted of five residential units each with shared sauna and a guestroom.

Spaces between units

Having gaps between units is the main architectural concept in order to assign the threshold spaces in between public-private realms. Hence, the apartment units will have less privately occupied spaces.

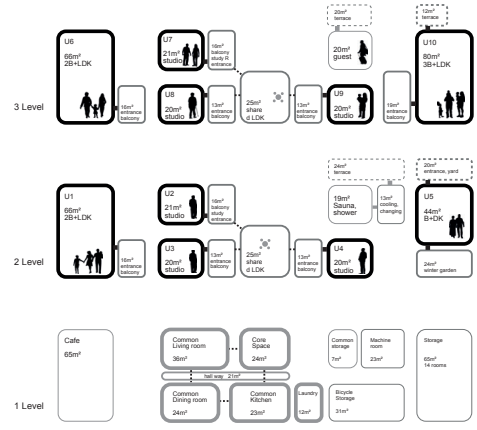
Imaginary residents

The composition of the imaginary households are vary in type in order to reflect the demand of current Finnish society. Among the ten households, there are three families with children, one elderly couple, one co-habitat without child, one single parent and four singles.



ARRANGEMENT OF SPACE UNITS

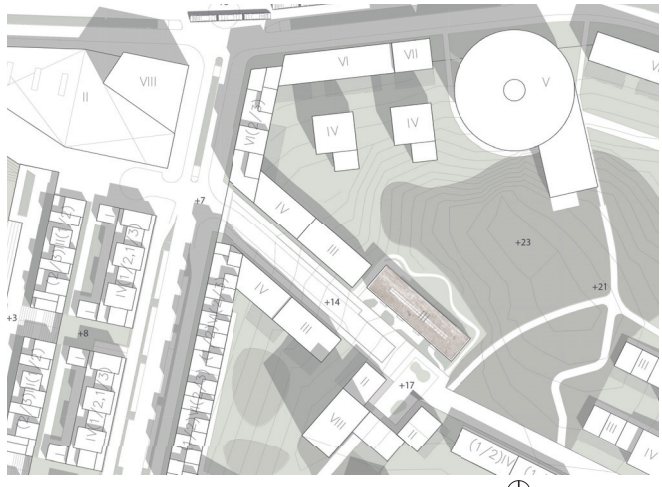
STATISTICS OF SPACE, DEMOGRAPHY AND UNITS



SPACE ORGANIZATION

MAP OF HELSINKI

URBAN PLAN OF KRUUNUVUORENRANTA 1:5000



TOWN PLAN 1:1000

Building Site

Helsinki

Even though Finland has achived a certain level of economic development during the 20th centry, the urbanization in Helsinki area is still ongoing.
One reason for this is relatively lower density of habitation as a capital city. In 2016, the population of Helsinki metropolitan area is reaching 1.5 million and is constantly growing. So, the city goverment of Helsinki has planned to densify the city to prevent urban sprawl.

Kruunuvuorenranta

As a new housing develoment area planned by the City of Helsinki, Kruunuvuorenranta is a potential place where the future clients would be able to start their new habitat project . The site is about 4km away from the Central railway station of Helsinki.
After the construction of the new bridge connecting Kruunuvuorenranta to the city centre, the trip to city centre will be shortened to approximately 20min by tram or bicycle.

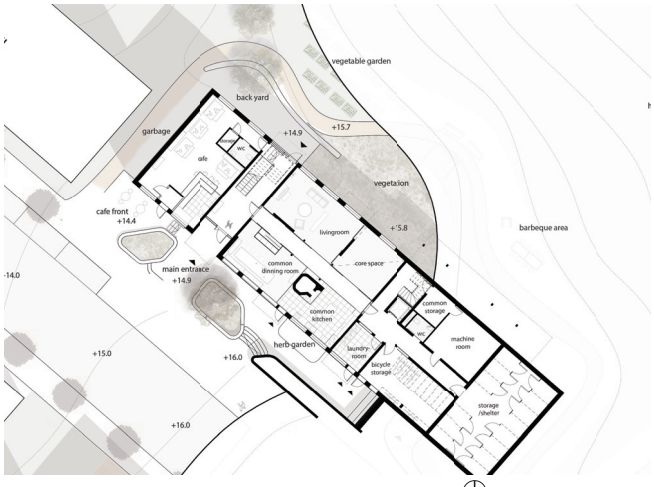
General Information

Residential Floor Surface: 580,000 km^2
Office and business floor surface: 55,000 km^2
Residents: 12,500
City block and traffic areas: 95 ha
Recreational and nature areas: 106 ha
Public services: Two schools, six day-care centres, sports hall and sports park, a beach, harbour for small boats, three grocery stores, restaurants, cafe and ground-floor business premises for small shops

UPHILL TO THE BUILDING

CAFE FRONT

WEST ELEVATION 1:100



SITE PLAN (LEVEL 1) 1:200

SITE PLAN (LEVEL 2) 1:200

Public Level

Cafe

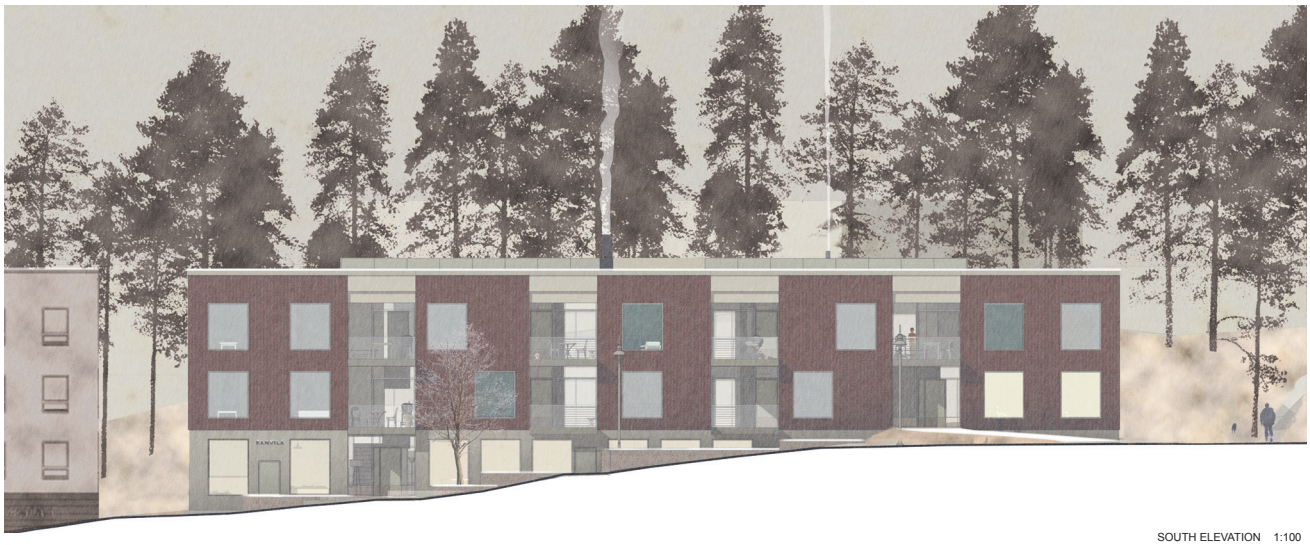
When people walk up the hill, they see a red wooden building. As it gets closer, a cafe welcomes everyone. Not only residents, but also neighbours are always welcome to this place. If a customer has a chance to know one of the residents living in this red building, one might visit more spaces in this cohousing some day.

Plaza

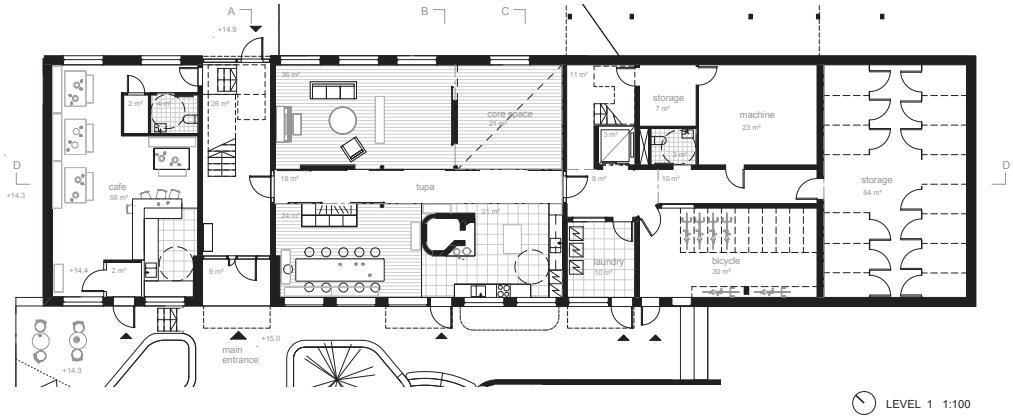
People from the neighbouring area will face the co-housing from this square (28 x 15m). The trees in the courtyard give intimacy to the residents. The small plaza could host event such as summer festivals. Thus, most of the balconies in the cohousing face here and residents can often look down what is happening on the plaza.

MAIN ENTRACE

PLAZA



SOUTH ELEVATION 1:100



LEVEL 1 1:100

Open to People

The main entrance is on the first level next to the cafe. The visitors will face the entrance and wait for someone to open the door.
However, as this cohousing is like a village, rather than a door to a private home, the entrance can be a welcoming place to stay for a while.

Level 1

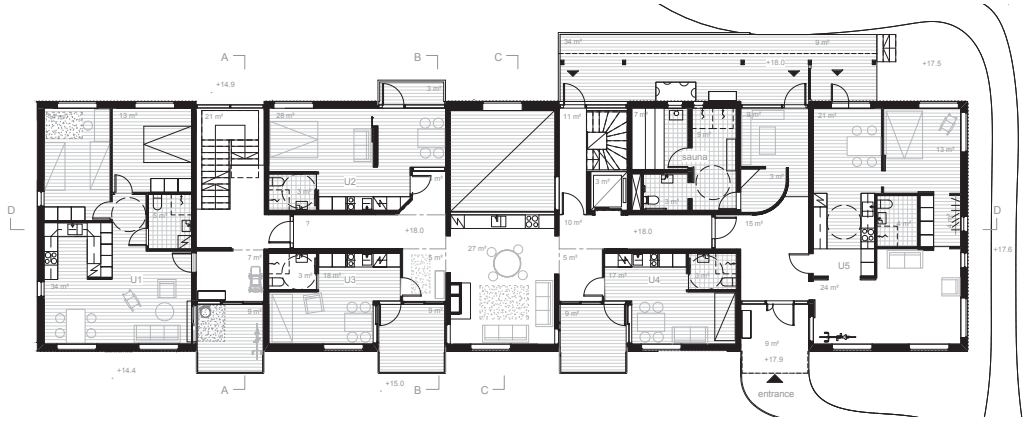
Most of the visitors and residents would pass the first level. As the whole floor is semi-public realm, there are always some people here to meet. There are a big scale kitchen, diningroom and livingroom. They are connected to each other but can be seperated or regulated by sliding walls when it is needed. Hence, the doors prevent from one bustling dominating the whole space.

SECTION C 1:100

TUPA (COMMON DINNINGROOM AND KITCHEN)

TUPA

EAST ELEVATION 1:100



LEVEL 2 1:100

Limited Open

Some spaces are quiet and less burstling as there is a moment with a wish to be alone or just to be with one good company.

Level 2

Here is the residential floor but also a place for small gatherings such as barbeque, sauna and a cup of tea in the winter-garden. Neighbours living around might easily drop by, if a friend is there because this level faces the courtyard.
Whereas the south part of the building is bright and close to neighbours, the northern side is facing nature.

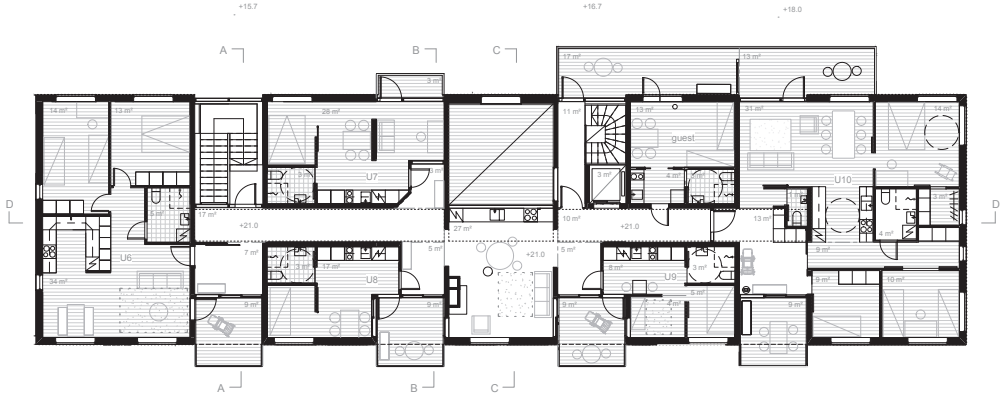
SECTION B 1:100

CORE SPACE

SECONDARY ENTRANCE

SHARED LIVINGROOM

NORTH ELEVATION 1:100



LEVEL 3 1:100

To Private Spaces

Our home is the place where we take care of ourselves. For some people, there are family members to take care of.
But what kind of relationship our own space and our home will have with the outside?
That is a question of how we enter in and step out from our home.

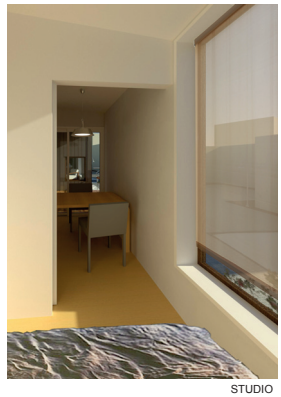
Level 3

It is a place for comfort and rest. Nevertheless, the residents are not limited to their own units anymore. With a pair of slippers or barefoot, it would be nice to roam around and join for looking at a wood fire.
How about having fresh air on the balcony and look at your home from outside surrounded by wood siding?

SECTION A 1:100

SHARED KITCHEN

STUDIO ENTRANCE



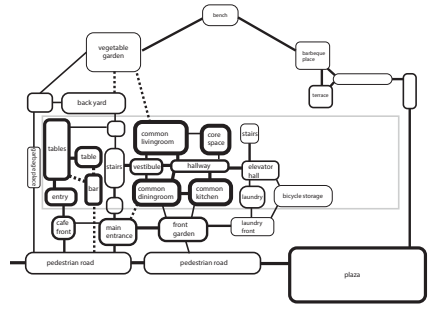
STUDIO

VIEW FROM THE HILL

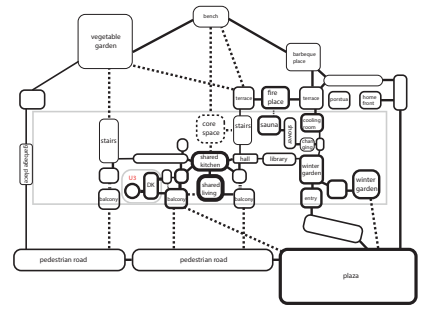
SECTION D 1:100

Spatial Freedom in Living

The two diagarms show the avaiable spaces for a resident living in this cohousing. A sense of neighbourhood is able to be established when there is realm that a dweller can take of responsiblity outside. Also, with having extensive shared space, residents do not feel isolation in there home.
One can always hang around all the spaces on the ground floor and it is a joy to see people's garden along the hallways.



AVAILABLE SPACE ON LEVEL 1 FOR U3 RESIDENT



AVAILABLE SPACE ON LEVEL 2 FOR U3 RESIDENT